

# Chapter 15: Exchange rate systems and economic growth and development

## Application of economics in the real world

### Application of economics in the real world 15.1: Devaluation of the pound and UK economic performance

- 1 The central bank will increase its key interest rate (in the UK, Bank Rate) to attract capital flows into the country. This increases demand for the currency, which raises the exchange rate. The central bank can also use reserves to buy up its own currency on foreign exchange markets. In doing so, it is creating an artificial demand for its own currency.
- 2 A fall in the exchange rate increases the prices of imports, which leads to cost-push inflation within the country. This effect may be lessened if domestic consumers are able to switch away from buying imported goods, replacing them with domestically produced goods instead. Between the date of the Brexit referendum in 2016 and September 2019, the pound depreciated by 16%, though the UK inflation rate did not increase by this amount.
- 3 On 30 June 2019, in an article in the *Financial Times* titled ‘Why a weaker pound has failed to turbocharge the economy’, Azad Zangana wrote:

*The sharp fall in the pound in the wake of the 2016 Brexit referendum would help ‘rebalance the UK economy’, in the words of Mervyn King, former governor of the Bank of England. But since then, the UK has struggled to improve its trade position and has certainly not seen any boost to GDP growth.*

*The idea was that a fall in sterling would rejuvenate British industry: exports would become cheaper to overseas buyers, leading to higher demand and sales. Faster growth in exports would boost the economy, along with job creation and wages.*

*The pound is once again under pressure, with a further depreciation expected if the UK leaves the EU without a deal. But while some commentators continue to argue that a weaker currency can help to stimulate the economy, the data suggest a different narrative is playing out.*

*Between the end of 2015 and the end of the first quarter of 2019, trade-weighted sterling fell 12.1%. Meanwhile, the manufacturing sector as a share of the total value added of the economy rose from 10.02% to 10.07%. And as a share of total employment, manufacturing increased from 7.69% to 7.7% — hardly the rebalancing some had hoped for.*

*The trade data are even worse. In the first quarter of 2019, net trade reduced GDP growth by 3.4 percentage points compared with a year earlier. This is the most negative quarterly year-on-year contribution from trade since records began in 1955.*

*Granted, pinning this on sterling is unfair as the stockpiling of goods in the run-up to the March Brexit deadline played a large role, but there is plenty of other evidence of the lack of improvement in the UK’s external performance.*

*Currency is just one of several key drivers that a standard trade model would rely on to explain the volume of exports. Taking a simple weighted average of GDP growth using the UK’s export shares tends to be three to five times more powerful in explaining growth in exports than currency. When examining a nation’s export performance we should also take global trade into account — the question is, has the UK managed to take a bigger slice of the world trade cake?*

*Since 2000, the volume of global exports has almost doubled, while the UK's has risen by almost two-thirds, according to Schroders' calculations. Britain's share of global exports has therefore fallen, despite trade-weighted sterling falling 29% over the same period.*

*Alongside currency moves, there are two additional factors to consider when explaining the UK's dismal performance. The first is the competitiveness of the labour market. The UK has long been known for having one of the most flexible labour markets in the world. Yet it has not been able to keep up in terms of productivity growth, and has therefore allowed the cost of labour per unit of output to rise versus that of its competitors.*

*The trade-weighted euro has risen 23% since January 2000, for example, while the sterling equivalent has fallen 29%. Despite this wide gulf, the performance of Germany's and the UK's real effective exchange rates — that is, the nominal trade-weighted exchange rate adjusted for unit labour costs — has almost been the same over this period. So the advantage of a depreciated sterling has largely been lost (against Germany) due to poor labour market performance.*

*The second factor to consider is whether exporters have pricing power in foreign markets. Most of the value of the UK's total exports is generated by a small proportion of companies, often large multinationals that are protected by patents and intellectual property. A good example is GlaxoSmithKline, a global top 10 pharmaceutical company that has the ability to price its drugs in foreign markets.*

*But as sterling has depreciated, many British exporters have simply left their prices unchanged and become more profitable in sterling terms. This is great for investors, but less so for the economy in real terms — without the increase in exports, part of the expected benefit from the currency depreciation is lost.*

*If sterling falls far enough, companies will choose to export rather than serve the domestic economy and the UK will be able to compete. But in order to not erode the competitive advantage, a much larger depreciation than what we have seen would be needed and labour costs would have to remain at current levels. The cost of such a currency fall in terms of higher inflation, lower purchasing power and the destruction of the value of savings would be devastating.*

- 4 In the last year (2022), the pound gradually fell. The fall accelerated with the poor reaction to Prime Minister Truss's mini-budget and reached, against the US dollar, its lowest level for 30 years (around £1 = \$1.07). After Truss's departure from office, the pound began to recover and it had reached around £1 = \$1.24 by early 2023.

## Application of economics in the real world 15.2: Why GNP figures provide an inadequate indicator of economic development

- 1 According to Investopedia, gross domestic product (GDP) is the value of a nation's finished domestic goods and services during a specific time period. The gross national product (GNP) is the value of all finished goods and services owned by a country's residents over a period of time.

GDP and GNP are two of the most commonly used measures of a country's economy, both of which represent the total market value of all goods and services produced over a defined period.

There are differences between how each one defines the scope of the economy. While GDP limits its interpretation of the economy to the geographical borders of the country, GNP extends it to include the net overseas economic activities performed by its nationals. Simply put, GNP is a superset of GDP.

2 There are three methods of measuring the flow of new output in an economy. First, the flow of new output can be measured by adding together the incomes received by the different factors of production such as capital and labour. Measured in this way, the flow is called national income. Second, the flow can be measured by summing the totals of the actual goods and services produced by the economy. The flow is now called national output or national product. Finally, we can measure national expenditure. This shows how factor incomes such as wages and profits end up being spent on the goods and service produced by the economy.

Since they are three different ways of measuring the same things (the flow of new output), and provided that we ignore income flows into and out of the economy, it follows that national income, national output and national expenditure always equal each other and add to the same totals.

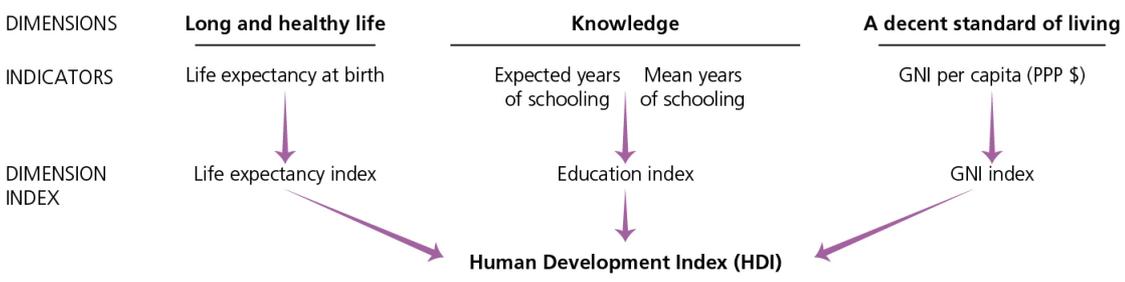
In summary:

- The income approach sums the factor incomes to the factors of production.
- The output approach adds up the ‘value added’ by each of the industries in the economy, such as agriculture, manufacturing and services.
- The expenditure approach sums consumption + investment + government expenditure + exports – imports.

The preliminary estimate of GDP is based solely on the output approach to measuring the flow of new output. The output approach measures gross value added (GVA) at a detailed industry level before aggregating to produce an estimate for the whole economy.

3 According to the United Nations, the Human Development Index (HDI) was created to emphasise that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone. The HDI can also be used to question national policy choices, asking how two countries with the same level of gross national income (GNI) per capita can end up with different human development outcomes.

The HDI is a summary measure of average achievement on key dimensions of human development: a long and healthy life, being knowledgeable and having a decent standard of living (see Figure AERW15.2).



**Figure AERW15.2** Components of the Human Development Index

The health dimension is assessed by life expectancy at birth. The education dimension is measured by mean of years of schooling for adults aged 25 years and above, and expected years of schooling for children entering school. The standard of living dimension is measured by GNI per capita. The HDI uses the logarithm of income to reflect the diminishing importance of income with increasing GNI. The scores for the three HDI dimension indices are then aggregated into a composite index using geometric mean.

The HDI simplifies and captures only part of what human development entails. It does not reflect on inequalities, poverty, human security, empowerment etc.

- 4 In 1967, Robert Kennedy concluded his critique of GNP with the words, ‘It measures everything, in short, except that which makes life worthwhile; and it can tell us everything about America — except whether we are proud to be Americans.’

Earlier in his critique, Kennedy makes indirect reference to negative externalities (air pollution, the destruction of the redwoods and the death of Lake Superior) and to demerit goods (advertising for cigarettes, special locks for doors, and jails for people who break them, and the production of napalm, missiles and nuclear warheads).

Economists generally believe that measures of national income, including GNP, are a useful starting point for measuring human happiness and welfare, but that they have to be built on. This is what the United Nation’s HDI and the Index of Sustainable Economic Welfare (ISEW) try to do. The Office for National Statistics has published a useful document ‘Beyond GDP: Measuring the economic well-being of individuals’, which can be accessed on the internet.

## End-of-chapter questions

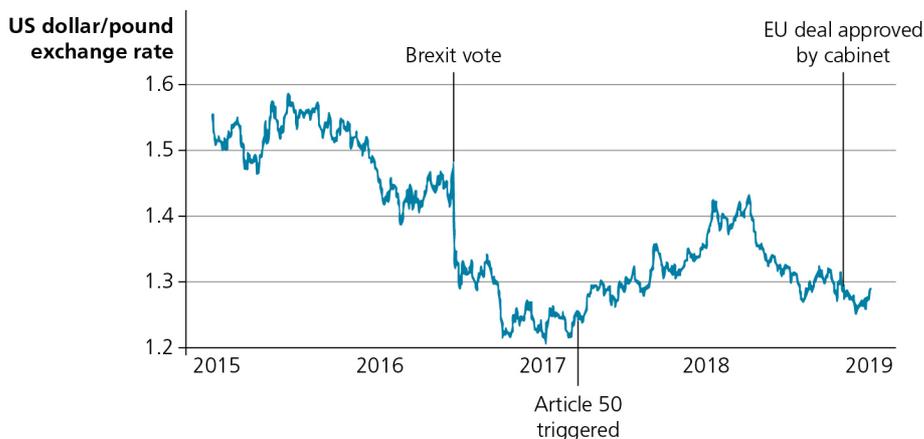
- 1 According to Currency Exchange International:

*Fixed currency exchange rates are mainly found in Africa and the Middle East. A fixed exchange rate, also known as a pegged rate, is set and maintained by the central bank. The central bank links its currency to another country’s currency, making it so that the rate will not change. Most often countries peg their rate to the US dollar, but it can also be seen pegged to the euro, the yen or a basket of currencies. In order for countries to maintain the value of their currency at the official level the central bank must intervene by keeping a high level of foreign reserves. The central bank uses these funds to adjust to fluctuations in the market. The central bank possesses the power to release or absorb funds into or out of the market and maintaining the right amount of foreign reserves is the key to managing this power.*

*In comparison, floating currency exchange rates depend on supply and demand. This means that when the demand for a currency is high its value will increase. Conversely, when the demand is low a country will experience the latter. The value of a country’s currency greatly affects its position in international trade. When a country’s currency value increases, imported goods will become cheaper, making this a desirable position for the country. However, there is debate as to whether letting a currency float actually provides the high level of benefits that we perceive. It can be difficult for a small country to depend on a floating currency as letting their currency depreciate may not necessarily result in cheaper goods in world markets. While each country makes its own decision to enter the market with a fixed or floating exchange rate, it is rare that a currency is wholly fixed or floating.*

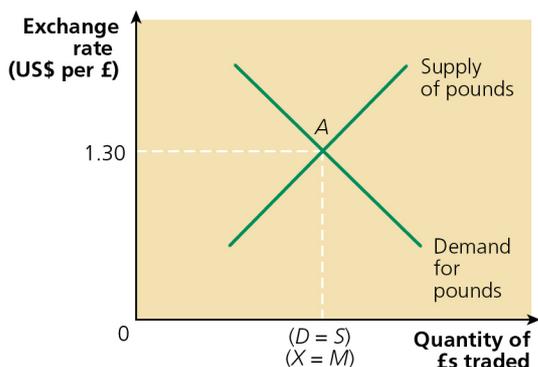
- 2 Since the UK pound left a fixed exchange rate system known as the Exchange Rate Mechanism (ERM) of the European Union in 1992, its exchange rate has ‘cleanly’ floated. Clean floating is the same as freely floating and pure floating — that is, there is no central bank intervention to prop up the exchange rate or to manipulate its value. In contrast to clean floating, ‘managed floating’ or ‘dirty floating’ occurs when the exchange rate is officially floating, in the sense that a country’s monetary authorities announce that market forces are determining the exchange rate, but in fact they intervene unofficially behind the scenes, buying or selling their own currency in order to influence the exchange rate. Nevertheless, even in a ‘cleanly’ floating system, the Bank of England does intervene on a daily basis, as part of a ‘smoothing operation’ through which it tries to iron out temporary fluctuations in the pound’s exchange rate.
- 3 In the aftermath of the Brexit vote in 2016, the pound fell significantly, as shown in Figure A15.1. The pound remained low (between \$1.20 and \$1.30) after the eventual departure from the EU. It recovered some ground in 2020 but fell sharply again due to the uncertainty the

pandemic created. Once again, it recovered in 2021 and 2022 before falling sharply after Prime Minister Liz Truss attempted to implement a badly received ‘fiscal event’, and reached a 30-year low in autumn 2022 of around \$1.07 — only to recover once again to around \$1.20 in late 2022/early 2023.



**Figure A15.1** US dollar/pound exchange rate, 2015–19

- 4 Exchange rate equilibrium occurs at the market-clearing exchange rate at which the demand for pounds on foreign exchange markets equals the supply of pounds. In Figure A15.2, this is determined at point *A*. The equilibrium exchange rate is \$1.30 to the pound.



**Figure A15.2** Exchange rate equilibrium in a freely floating exchange rate system

At this exchange rate, the money value of exports (paid in sterling) equals the money value of imports (paid in foreign currencies). And provided we assume that exports and imports are the only items in the current account, the current account is also in balance.

Because we are assuming away any complications introduced by capital flows, exchange rate equilibrium implies balance of payments equilibrium on current account and vice versa. The two equilibria are just different sides of the same coin: exchange rate equilibrium is price equilibrium, whereas current account equilibrium in the balance of payments (where  $X = M$  in the diagram) means that the quantity of the currency flowing into the country equals the quantity flowing out. Given the simplifying assumptions we have made, once the balance of payments is in equilibrium, there is no pressure for the exchange rate to rise or fall.

### 5 The advantages of floating exchange rates

Economists generally agree that, provided there are no distorting capital flows, freely floating exchange rates have the following advantages.

- **Balance of payments equilibrium.** The exchange rate (which is the external price of the currency) should move up or down to correct a payments imbalance. Provided the adjustment mechanism operates smoothly, a currency should never be overvalued or undervalued for very long. In the event of an overvalued exchange rate causing export uncompetitiveness and a payments deficit, market forces should quickly adjust towards

an equilibrium exchange rate, which also achieves equilibrium in the balance of payments. Similarly, undervaluation should be quickly corrected by an upward movement of the exchange rate.

- **Resource allocation.** If the world's resources are to be efficiently allocated between competing uses, exchange rates must be correctly valued. For efficient resource allocation in a constantly changing world, market prices must accurately reflect shifts in demand and changes in competitive and comparative advantage that result from technical progress and events such as discoveries of new mineral resources. In principle, a freely floating exchange rate should respond and adjust to these changes. By contrast, a fixed exchange rate may gradually become overvalued or undervalued, as demand or competitive and comparative advantage move against or in favour of a country's industries.
- **Domestic policy objectives.** It is sometimes argued that when the exchange rate is freely floating, balance of payments surpluses and deficits cease to be a 'policy problem' for the government, as it is then free to pursue the domestic economic objectives of full employment and growth. Market forces 'look after' the balance of payments while governments concentrate on domestic economic policy. If, in the pursuit of domestic objectives, the inflation rate rises out of line with other countries, in a freely floating world the exchange rate simply falls to restore competitiveness.
- **Inflation.** In much the same way, a 'responsible' country with a lower than average inflation rate should benefit from a floating exchange rate because the exchange rate insulates the country from 'importing inflation' from the rest of the world. If inflation rates are higher in the rest of the world, a fixed exchange rate causes a country to 'import' inflation through the rising prices of goods imported from high-inflation countries. By contrast, a floating exchange rate floats upward, which lowers the prices of imports, insulating the economy against importing inflation.
- **Independent monetary policy.** With a floating exchange rate, monetary policy can be used solely to achieve domestic policy objectives, such as the control of inflation. This is called an 'independent' monetary policy. By contrast, with a fixed exchange rate, interest rates may be determined by events in the outside world (and in particular by capital flows out of and into currencies), rather than by the needs of the domestic economy. To maintain a fixed exchange rate, interest rates may have to be raised to prevent the exchange rate from falling. In this situation, monetary policy is no longer independent, in the sense that it can no longer be 'assigned' to pursuing purely domestic policy objectives.

### The disadvantages of floating exchange rates

Freely floating exchange rates nevertheless have some disadvantages, particularly relating to the fact that, in the modern globalised world in which financial capital is internationally mobile, capital flows rather than exports and imports are the main determinants of floating exchange rates. This and the other disadvantages are explained below.

- **Speculation and capital flows.** The argument that a freely floating exchange rate is never overvalued or undervalued for very long depends crucially upon the main assumption of the traditional theory of exchange rates, that currencies are bought and sold on foreign exchange markets only to finance trade. This assumption means that speculation and capital flows have no influence upon exchange rates. But as the monetary theory of exchange rates argues, this is at odds with how the modern globalised economy works. These days, well over 90% of currency transactions taking place on foreign exchange markets stem from capital flows and from the decisions of individuals, business corporations, financial institutions and even governments to switch wealth portfolios between different currencies. In the short run, exchange rates are extremely vulnerable to *speculative capital* or *'hot money'* movements into or out of currencies. Just like a fixed

exchange rate, a floating exchange rate can be overvalued or undervalued, which means it fails to reflect correctly the trading competitiveness of the country's goods and services.

- **International trading uncertainty.** It is sometimes argued that, whereas fixed exchange rates create conditions of certainty and stability in which international trade can prosper and grow, the volatility and instability caused by floating exchange rates slows the growth of, and may even destroy, international trade. In fact, *hedging*, which involves the purchase or sale of a currency in the 'forward' market three months in advance of the actual delivery of the currency and payment for trade, considerably reduces the trading uncertainties associated with floating exchange rates. Indeed, fixed and managed exchange rates may also cause uncertainty, especially when a currency is overvalued and a devaluation is expected.
  - **Cost-push inflation.** Floating exchange rates sometimes contribute to cost-push inflation. Suppose a country has a higher rate of inflation than its trading partners. Trading competitiveness and the current account of the balance of payments both worsen, causing the exchange rate to fall in order to restore competitiveness. This may then trigger a vicious cumulative downward spiral of ever faster inflation and exchange rate depreciation. The falling exchange rate increases import prices, which raise the rate of domestic cost-push inflation. Workers react by demanding pay rises to restore the value of the eroded real wage. At the next stage, increased inflation erodes the export competitiveness initially won by the fall of the exchange rate, which in turn triggers a further fall in the exchange rate to recover the lost advantage. And so the process continues. The resulting downward spiral can eventually destabilise large parts of the domestic economy, causing unemployment and reducing economic growth.
  - **Demand-pull inflation.** Floating exchange rates can trigger demand-pull inflation as well as cost-push inflation. With a floating exchange rate, there is no need to deflate the domestic economy to deal with a balance of payments deficit on the current account. But suppose a large number of countries with floating exchange rates simultaneously expand aggregate demand. This can lead to excess demand on a worldwide scale, which fuels global inflation. This happened in the 1970s, when a worldwide expansion of demand created conditions in which oil and primary goods producers could raise prices and still sell in world markets. In countries such as the UK, the resulting inflation appeared to be 'import cost-push' inflation, caused by the rising cost of imported energy and raw materials. However, the true cause lay in excess demand created by the simultaneous effects of demand expansion and floating exchange rates, when world supply could not increase, at least in the short run, to meet the surge in global demand.
- 6 Economic growth measures changes in the physical quantity of goods and services that an economy actually produces, or has the potential to produce, but economic development goes further, encompassing not just the increase in the quantity of output, but also its quality and contribution to human happiness.
- Economic growth does not necessarily improve the economic welfare of all or most of the people living in a country. If a ruling elite in a country use the fruits of growth to buy military and police equipment, which they then use to suppress those in the population who wish to change how the economy operates, although economic growth has occurred, economic development has not.
- 7 Huge quantities of mineral resources have been discovered in the Democratic Republic of Congo (DRC) in recent decades. If properly developed, largely through the generation of export income, the exploitation of these resources could lead to a high rate of economic growth combined with significant economic development which benefits the whole DRC population. Despite this, the economy has declined drastically since the mid-1980s. Corruption

and bribery by the country's ruling elite are the main factor leading to the lack of economic growth and development.

A second factor, also illustrated by the DRC's experience, is the effect of internal wars and conflict. The First and Second Congo Wars, which began in 1996, have dramatically reduced national output and government revenue, have increased external debt, and have resulted in the deaths of more than 5 million people from war, and associated famine and disease. Malnutrition affects approximately two-thirds of the country's population.

A third factor is financial aid received by African countries from China. Western countries, particularly the USA, used to provide development aid to Africa, but Western aid has been overtaken by financial help from China. For the most part, this has benefited African countries, but issues arise about whether the aid is creamed off by African despots, and whether the fact that much of the aid is 'tied' aid means that it benefits China much more than the recipient African countries.

- 8 Economists often use national income figures, particularly gross domestic product per head (GDP per capita), as an indicator of economic development. Unfortunately, for most poor developing countries, GDP is usually greater than another national income indicator of development, gross national income (GNI). This is because of profit outflows and interest payments from developing economies to more developed economies, and to banks within these economies. But are measures of national income or output, whether GDP or GNI figures, the best measures of standards of living, economic welfare and economic development? To try to answer this question, it is useful first to identify three components of economic welfare: total economic welfare equals economic welfare derived from goods and services purchased in the market economy, plus economic welfare derived from public goods and merit goods provided collectively by the state, plus economic welfare derived from quality-of-life factors, including external benefits minus external costs and intangibles.

If used carefully, national income figures can provide a reasonable estimate of economic welfare derived from the first two of these three elements, both of which relate to the direct consumption of material goods and services.

However, national income fails to provide a satisfactory indication of how externalities and other quality-of-life factors affect economic welfare and living standards. The Human Development Index, which does attempt to measure the effect of these factors, is a better measure of economic development than raw national income statistics.

## Test yourself answers

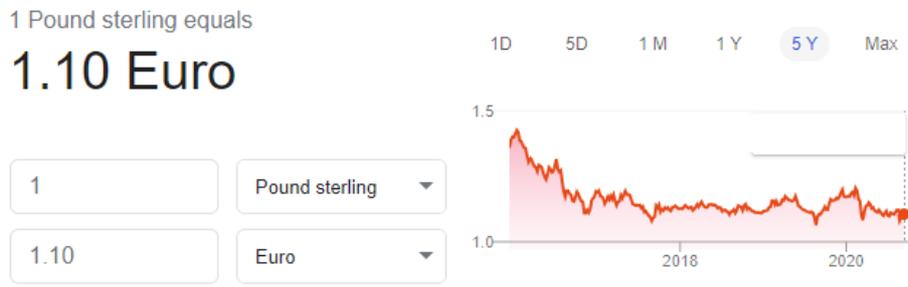
### TEST YOURSELF 15.1

The nominal exchange rate measures how much of one currency is necessary to acquire 1 unit of another. Real exchange rates are nominal rates adjusted for differences in price levels in different countries. The real exchange rate measures the weighted average value of a country's currency relative to a basket of other major currencies, adjusted for the effects of inflation. The real exchange rate of the pound is calculated by the following formula:

$$\text{pound's real exchange rate} = \text{sterling index} \times \frac{\text{index of the domestic price level}}{\text{index of weighted foreign price levels}}$$

## TEST YOURSELF 15.2

The charts below show the UK pound's exchange rates against the US dollar and the euro on 9 October 2020, and for the five years preceding that date. The exchange rates were floating and fell rapidly in the first two years of the period shown, before stabilising at or around \$1.30 and €1.10 to the pound.



Clearly, when you are reading this section, you should look up the current values for the pound against both the dollar and the euro.

## TEST YOURSELF 15.3

The increase in aggregate demand is likely to increase the demand for imports. If this is the case, pounds will be sold in order to buy the overseas currencies which are required to pay for the extra imports. This creates an excess supply of pounds on the foreign exchange market and a fall in the pound's exchange rate, other things being equal.

## TEST YOURSELF 15.4

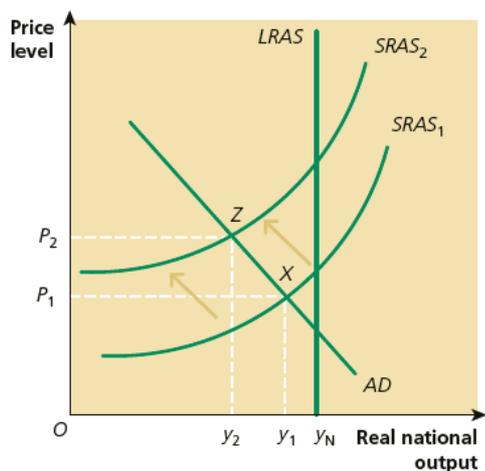
A fall in the exchange rate raises the price of imports and reduces the overseas price of the country's exports. This increases the international price competitiveness of the country's exports, which, subject to the Marshall–Lerner condition being met, should help to correct the country's trade deficit.

## TEST YOURSELF 15.5

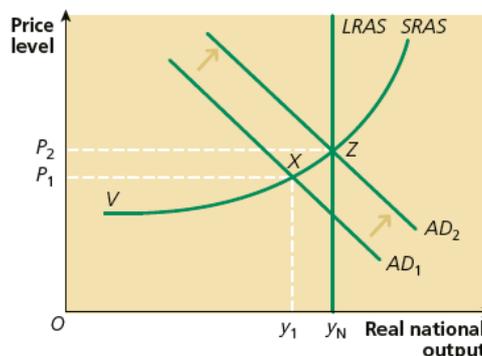
In economics, hot money is the flow of funds (or capital) from one country to another in order to earn a short-term profit on interest rate differences and/or anticipated exchange rate shifts. These speculative capital flows are called 'hot money' because they can move very quickly in and out of markets, potentially leading to market instability.

## TEST YOURSELF 15.6

Figures 11.20 and 11.19 on pages 399 and 398 of the textbook illustrate cost-push and demand-pull inflation on *AD/AS* graphs.



**Figure 11.20** Cost-push inflation illustrated on an *AD/AS* diagram



**Figure 11.19** Demand-pull inflation illustrated by an *AD/AS* diagram

In both diagrams, equilibrium national income is initially at point *X*, with real output and the price level respectively at  $y_1$  and  $P_1$ . In Figure 11.20, the money costs of production that firms incur when they produce output rise: for example, because money wages or the price of imported raw materials increase. The increase in production costs causes the *SRAS* curve to shift left and up from *SRAS*<sub>1</sub> to *SRAS*<sub>2</sub>. As a result of the shift of the *SRAS* curve to the left, the price level increases to  $P_2$ , but higher production costs have reduced the equilibrium level of output that firms are willing to produce to  $y_2$ . The new equilibrium national income is at point *Z*. The economy could be in recession, in which case recessionary effects may moderate the cost increases.

With regard to demand-pull inflation, Figure 11.19 shows an economy initially producing below the normal capacity level of output, and then moving to normal capacity, after the *AD* curve has shifted right to *AD*<sub>2</sub>. Following the increase in aggregate demand, equilibrium national income is at point *Z*, with the economy also on its long-run aggregate supply (*LRAS*) curve. In this situation, the economy is producing at normal capacity, so any further shift of aggregate demand to the right would result solely in the long run in demand-pull inflation, with no increase in real output (except possibly on a temporary basis).

Contrast this outcome with what would happen if the *AD* curve was initially located substantially to the left of *AD*<sub>1</sub>: for example, at point *V*. The economy would be in deep recession, suffering severe demand-deficient or cyclical unemployment. Given this initial position, a shift of aggregate demand to the right would increase output and employment, with relatively little effect on inflation to start with. Arguably, the adverse effect of a rising price level would be less significant than the boost to output and employment brought about by an increase in aggregate demand. However, as the increasing slope of the *SRAS* curve suggests, as the *AD* curve shifts right and moves closer to the *LRAS* curve, increasingly the reflation of real output (and employment) gives way to inflation of the price level.

## TEST YOURSELF 15.7

A change in the exchange rate from \$1 = £1.50 to \$1 = £2.00 is a significant appreciation of the exchange rate. It will make the prices of UK exports rise on overseas markets and the prices of imports fall in the UK. This will worsen the UK's balance of payments on current account, thereby reducing aggregate demand in the UK. This will reduce inflationary pressure in the UK, partly through a fall in import prices. The correct answer is thus D.

## TEST YOURSELF 15.8

A managed-floating currency is when the central bank chooses to intervene in the foreign exchange markets to affect the value of the currency to meet some of its macroeconomic objectives. It might attempt to reduce the value of the exchange rate to:

- improve the balance of trade in goods and services and improve the current account position
- reduce the risk of a deflationary recession — a lower exchange rate increases the demand for exports and reduces the demand for imports
- rebalance the economy away from domestic consumption towards exports and investment

## TEST YOURSELF 15.9

Exchange rate stability usually means that the country's exchange rate is competitive in international markets. This increases business confidence and creates a framework in which entrepreneurs are more willing to make long-run decisions in the expectation of future profits and not just short-term profits.

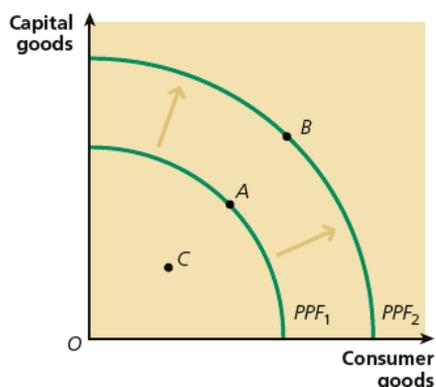
## TEST YOURSELF 15.10

Full monetary union means that all member countries of the union use a single currency, such as the US dollar, which is under the control of a central bank, for example the US Federal Reserve Bank. In the European Union, the currency is the euro and the central bank is the European Central Bank located in Frankfurt, Germany. The central banks of member countries, such as France, are more equivalent to branch banks, accepting the key interest rate set by the European Central Bank. They have little or no control over domestic monetary policy. The common monetary policy tends to reflect the needs of large member countries, such as Germany and France, rather than small countries like Ireland.

## TEST YOURSELF 15.11

Economic growth is defined as the increase in the potential level of real output the economy can produce over a period of time: for example, a year. This is long-run economic growth, which is not the same as short-run economic growth.

Figure 1.6 on page 18 of the textbook illustrates the difference between short-run and long-run economic growth.



**Figure 1.6** Long-run and short-run economic growth

If the economy's production possibility frontier is  $PPF_1$  initially, short-run economic growth is shown by the movement from point  $C$  inside the frontier to a point, such as point  $A$ , on the frontier. Long-run economic growth is shown by the movement from point  $A$  on  $PPF_1$  to point  $B$  on a new production possibility frontier,  $PPF_2$ . Short-run growth makes use of spare capacity and takes up the slack in the economy, whereas long-run growth increases total productive capacity.

## TEST YOURSELF 15.12

A country, such as Saudi Arabia, which exports large volumes of oil is usually a major producer of crude oil, drilling the commodity from beneath its land or sea surface. If the state owns the resource, it will gain revenue from the quantity of oil produced, multiplied by its selling price. If a sales tax is imposed on the price of oil, further revenue will be earned from the tax. If the demand for oil on world markets falls, sales revenue and any tax revenue will both fall, and the government might find itself short of revenue to finance public sector spending on items such as state-provided education and healthcare.

## TEST YOURSELF 15.13

Spending on education is a form of investment in human capital. Investing in a higher level of education leads to higher labour productivity (output per worker) and faster economic growth. Levels of consumer spending and the pattern of consumer spending change. For example, more educated and better-off citizens switch away from consuming inferior goods, such as basic foodstuffs, to purchase superior goods, such as a high-class restaurant meal.

## TEST YOURSELF 15.14

To achieve long-term economic growth, investment in new productive capacity is required. This must be financed by saving. However, poor countries with low per-capita incomes suffer from very low savings ratios. As a result, they cannot generate sufficient domestic savings to generate the investment required for sustainable growth to take place. Such countries also lack domestic capital markets which provide a link between domestic saving and investment. One possibility is to attract foreign direct investment (FDI) from abroad. This is possible if the poor country possesses plentiful natural resources which attract inward investment from foreign-based multinational companies. The danger here is that MNCs transfer much of the resulting wealth created by FDI back to the developed countries in which they are based.

## TEST YOURSELF 15.15

Corruption can be defined as dishonest or fraudulent conduct typically involving bribery. One way in which corruption affects economies is by adding hidden costs to market transactions. Government officials often benefit from bribery — for example, by forcing firms to pay bribes in order to lawfully conduct business.

In the building industry, another form of corruption is bid rigging, an example of which occurs in cartel agreements when firms all quote the same prices for the goods they provide. Corruption also occurs through practices such as the forgery of Construction Skills Certification Scheme (CSCS) certificates, which falsely claim that the holder has National Vocational Qualifications.

## TEST YOURSELF 15.16

Skill widening (or skill broadening) refers to a situation in which a worker accumulates a wider range of skills, such as a plumber enrolling on a course to obtain electrician qualifications. Skill deepening, by contrast, refers to training for more advanced plumbing qualifications, such as to fit and repair more advanced central heating boilers.