

## Chapter 6



# Open Economy Macroeconomics

We have so far assumed that the economy was closed—that it did not interact with the rest of the world. This was done to keep the model simple and explain the basic macroeconomic mechanisms. In reality, most modern economies are open. Interaction with other economies of the world widens choice in three broad ways

- (i) Consumers and firms have the opportunity to choose between domestic and foreign goods. This is the product market linkage which occurs through international trade.
- (ii) Investors have the opportunity to choose between domestic and foreign assets. This constitutes the financial market linkage.
- (iii) Firms can choose where to locate production and workers to choose where to work. This is the factor market linkage. Labour market linkages have been relatively less due to various restrictions on the movement of people through immigration laws. Movement of goods has traditionally been seen as a substitute for the movement of labour. We focus here on the first two linkages.

An **open economy** is one that trades with other nations in goods and services and, most often, also in financial assets. Indians, for instance, enjoy using products produced around the world and some of our production is exported to foreign countries. Foreign trade, therefore, influences Indian aggregate demand in two ways. First, when Indians buy foreign goods, this spending escapes as a **leakage** from the circular flow of income decreasing aggregate demand. Second, our exports to foreigners enter as an **injection** into the circular flow, increasing aggregate demand for domestically produced goods. Total foreign trade (exports + imports) as a proportion of GDP is a common measure of the **degree of openness** of an economy. In 2011-12, this was 53.6 per cent for the Indian Economy (imports constituted 32.3 per cent and exports 21.3 per cent of GDP). There are several countries whose foreign trade proportions are above 50 per cent of GDP.

Now, when goods move across national borders, **money** must move in the opposite direction. At the international level, there is no single currency that is issued by a central authority. Foreign economic agents will accept a national currency only if they are convinced that the currency will maintain a stable purchasing power. Without this confidence, a currency will not be used as an international medium

of exchange and unit of account since there is no international authority with the power to force the use of a particular currency in international transactions. Governments have tried to gain confidence of potential users by announcing that the national currency will be freely convertible at a fixed price into another asset, over whose value the issuing authority has no control. This other asset most often has been gold, or other national currencies. There are two aspects of this commitment that has affected its credibility – the ability to convert freely in unlimited amounts and the price at which conversion takes place. The **international monetary system** has been set up to handle these issues and ensure stability in international transactions. A nation's commitment regarding the above two issues will affect its trade and financial interactions with the rest of the world.

We begin section 6.1 with the accounting of international trade and financial flows. The next section examines the determination of price at which national currencies are exchanged for each other. In section 6.3, the closed economy income-expenditure model is amended to include international effects. Section 6.4 deals with the linkage between the trade deficit, budget deficit and the savings - investment gap briefly.

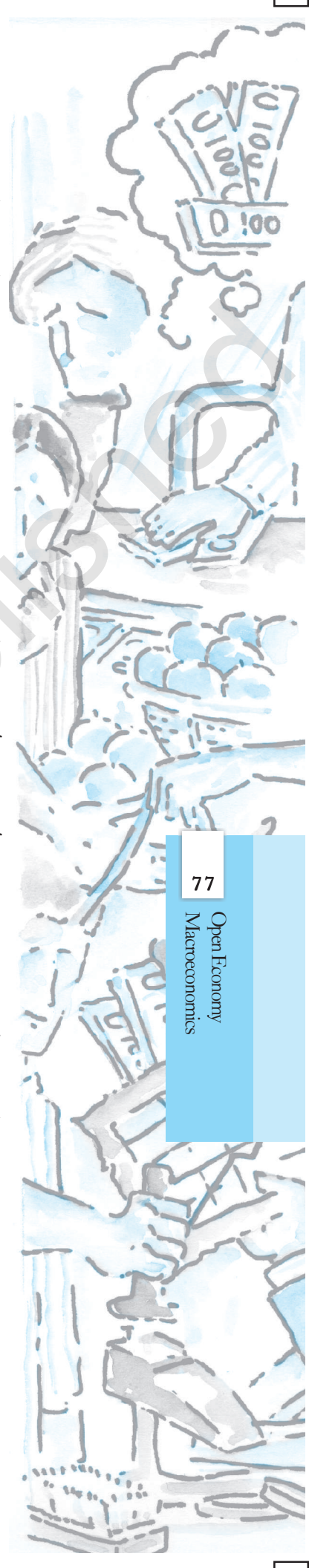
## 6.1 THE BALANCE OF PAYMENTS

The balance of payments (BoP) record the transactions in goods, services and assets between residents of a country with the rest of the world for a specified time period typically a year. Table 6.1 gives the balance of payments summary for the Indian Economy for the year 2012-13. There are two main accounts in the BoP – the current account and the capital account.

The **current account** records exports and imports in goods and services and transfer payments. The first two items in Table 6.1 record exports and imports of goods. The third item gives the trade balance which is obtained by subtracting imports of goods from the exports of goods. When exports exceed imports, there is a **trade surplus** and when imports exceed exports there is a **trade deficit**. In 2012-13, imports exceeded exports leading to a huge trade deficit in India of US \$ 90.67 million. Trade in services denoted as invisible trade (because they are not seen to cross national borders) includes both factor income (net income from compensation of employees and net investment income, the latter equals, the interest, profits and dividends on our assets abroad minus the income foreigners earn on assets they own in India) and net non-factor income (shipping, banking, insurance, tourism, software services, etc.). Transfer payments are receipts which the residents of a country receive 'for free', without having to make any present or future payments in return. They consist of remittances, gifts and grants. They could be official or private. The balance of exports and imports of goods is referred to as the **trade balance**. Adding trade in services and net transfers to the trade balance, we get the **current account balance** shown in item 5 of Table 6.1. This figure means that transactions from the current account component caused –38.97 million more dollars to flow out as payment than the receipts that flowed in. This is referred to as a **current account deficit** and for April - December 2012 works out to \$ 72 billion or 5.4 per cent of GDP. If this figure had been a positive number, there would have been a **current account surplus**. The **capital account** records all international purchases and sales of assets such as money, stocks, bonds, etc. We note that any transaction resulting in a payment to foreigners is entered as a **debit** and is given a negative sign. Any transaction resulting in a receipt from foreigners is entered as a **credit** and is given a positive sign.

### EXAMPLE 6.1

Can a country have a trade deficit and a current account surplus simultaneously?



Yes, in India, although trade deficit is a recurrent feature every year, for three consecutive years from 2001-02, 2002-03 to 2003-04, there was a surplus on the current account, to the tune of 0.7, 1.3 and 2.3 per cents of GDP respectively. This is because that earnings from services and private transfers outweighed the trade deficit.

### 6.1.1 BoP Surplus and Deficit

The essence of international payments is that just like an individual who spends more than her income must finance the difference by selling assets or by borrowing, a country that has a deficit in its current account (spending more abroad than it receives from sales to the rest of the world) must finance it by selling assets or by borrowing abroad. Thus, any current account deficit is of necessity **financed** by a net capital inflow.

Alternatively, the country could engage in **official reserve transactions**, running down its reserves of foreign exchange, in the case of a deficit by selling foreign currency in the foreign exchange market. The decrease (increase) in official reserves is called the overall **balance of payments deficit (surplus)**. The basic premise is that the monetary authorities are the ultimate financiers of any deficit in the balance of payments (or the recipients of any surplus). The balance of payments deficit or surplus is obtained after adding the current and capital account balances. In 2011-12, there was a balance of payments deficit of US\$ 12.8 billion. This was a draw-down of official reserves. During the first half of 2012-13, net accretion to reserves was US\$ 0.4 billion. A country is said to be in balance of payments equilibrium when the sum of its current account and its non-reserve capital account equals zero, so that the current account balance is financed entirely by international lending without reserve movements. We note that the official reserve transactions are more relevant under a regime of pegged exchange rates than when exchange rates are floating. (See section 6.2.3)

**Autonomous and Accommodating Transactions:** International economic transactions are called **autonomous** when transactions are made independently of the state of the BoP (for instance due to profit motive). These items are called 'above the line' items in the BoP. The balance of payments is said to be in surplus (deficit) if autonomous receipts are greater (less) than autonomous payments. **Accommodating transactions** (termed 'below the line' items), on the other hand, are determined by the net consequences of the autonomous items, that is, whether the BoP is in surplus or deficit. The official reserve transactions are seen as the accommodating item in the BoP (all others being autonomous).

**Errors and Omissions** constitute the third element in the BoP (apart from the current and capital accounts) which is the 'balancing item' reflecting our inability to record all international transactions accurately.

## 6.2 THE FOREIGN EXCHANGE MARKET

Having considered accounting of international transactions on the whole, we will now take up a single transaction. Let us assume that an Indian resident wants to visit London on a vacation (an import of tourist services). She will have to pay in pounds for her stay there. She will need to know where to obtain the pounds



*Your currency in exchange for the dollar? Should exchange rates between two currencies continue like this? Discuss.*

and at what price. Her demand for pounds would constitute a demand for *foreign exchange* which would be supplied in the *foreign exchange market* – the market in which national currencies are traded for one another. The major participants in this market are commercial banks, foreign exchange brokers and other authorised dealers and the monetary authorities. It is important to note that, although the participants themselves may have their own trading centres, the market itself is world-wide. There is close and continuous contact between the trading centres and the participants deal in more than one market.

The price of one currency in terms of the other is known as the **exchange rate**. Since there is a symmetry between the two currencies, the exchange rate may be defined in one of the two ways. First, as the amount of domestic currency required to buy one unit of foreign currency, i.e. a rupee-dollar exchange rate of Rs 50 means that it costs Rs 50 to buy one dollar, and second, as the cost in foreign currency of purchasing one unit of domestic currency. In the above case, we would say that it costs 2 cents to buy a rupee. The practice in economic literature, however, is to use the former definition – as the price of foreign currency in terms of domestic currency. This is the bilateral **nominal exchange rate** – bilateral in the sense that they are exchange rates for one currency against another and they are nominal because they quote the exchange rate in money terms, i.e. so many rupees per dollar or per pound.

However, returning to our example, if one wants to plan a trip to London, she needs to know how expensive British goods are relative to goods at home. The measure that captures this is the **real exchange rate** – the ratio of foreign to domestic prices, measured in the same currency. It is defined as

$$\text{Real exchange rate} = \frac{eP_f}{P} \quad (6.1)$$

where  $P$  and  $P_f$  are the price levels here and abroad, respectively, and  $e$  is the rupee price of foreign exchange (the nominal exchange rate). The numerator expresses prices abroad measured in rupees, the denominator gives the domestic price level measured in rupees, so the real exchange rate measures prices abroad relative to those at home. If the real exchange rate is equal to one, currencies are at **purchasing power parity**. This means that goods cost the same in two countries when measured in the same currency. For instance, if a pen costs \$4 in the US and the nominal exchange rate is Rs 50 per US dollar, then with a real exchange rate of 1, it should cost Rs 200 ( $eP_f = 50 \times 4$ ) in India. If the real exchange rises above one, this means that goods abroad have become more expensive than goods at home. The real exchange rate is often taken as a measure of a country's **international competitiveness**.

Since a country interacts with many countries, we may want to see the movement of the domestic currency relative to all other currencies in a single number rather than by looking at bilateral rates. That is, we would want an index for the exchange rate against other currencies, just as we use a price index to show how the prices of goods in general have changed. This is calculated as the **Nominal Effective Exchange Rate (NEER)** which is a multilateral rate representing the price of a representative basket of foreign currencies, each weighted by its importance to the domestic country in international trade (the average of export and import shares is taken as an indicator of this). The **Real Effective Exchange Rate (REER)** is calculated as the weighted average of the real exchange rates of all its trade partners, the weights being the shares of the respective countries in its foreign trade. It is interpreted as the quantity of domestic goods required to purchase one unit of a given basket of foreign goods.

