An open economy is one which interacts with other countries through various channels. So far we had not considered this aspect and just limited to a **closed economy** in which there are no linkages with the rest of the world in order to simplify our analysis and explain the basic macroeconomic mechanisms. In reality, most modern economies are open.

There are **three ways** in which these linkages are established:

1.Output Market: An economy can trade in goods and services with other countries. This widens choice in the sense that consumers and producers can choose between domestic and foreign goods.

2.Financial Market: Most often an economy can buy financial assets from other countries. This gives investors the opportunity to choose between domestic and foreign assets.

3.Labour Market: Firms can choose where to locate production and workers to choose where to work. There are various immigration laws which restrict the movement of labour between countries.

Movement of goods has traditionally been seen as a substitute for the movement of labour. We focus on the **first two linkages**. Thus, an open economy is said to be one that trades with other nations in goods and services and most often, also in financial assets. Indians, for instance, can consume products which are produced around the world, and some of the products from India are exported to other 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 goods produced within the domestic economy.

When goods move across national borders, **money must be used** for the transactions. At the international level there is no single currency that is issued by a single bank. Foreign economic agents will accept a national currency only if they are convinced that the amount of goods they can buy with a certain amount of that currency will not change frequently. In other words, 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.

In the past, governments have tried to gain the confidence of potential users by announcing that the **national currency will be freely convertible at a fixed price into another asset**. Also, the issuing authority will have no control over the value of that asset into which the currency can be converted. This other asset most often has been **gold**, or **other national currencies**.

There are **two aspects** of this commitment that have affected its credibility:

- The ability to **convert freely in unlimited amounts**, and
- The **price** at which this conversion takes place.

The **international monetary system** has been set up to handle these issues and ensure stability in international transactions.With the increase in the volume of transactions, **gold ceased to be** the asset into which national currencies could be converted (See Box 6.2). Although some national currencies have international acceptability, what is important in transactions between two countries is the **currency in which the trade occurs**.

For instance, if an Indian wants to buy a good made in America, she would need **dollars** to complete the transaction. If the price of the good is ten dollars, she would need to know how much it would cost her in **Indian rupees**. That is, she will need to know the **price of dollar in terms of rupees**. The price of one currency in terms of another currency is known as the **foreign exchange rate** or simply the **exchange rate**. We will discuss this in detail in section 6.2.

6.1 THE BALANCE OF PAYMENTS

The **Balance of Payments (BoP)** records the transactions in goods, services, and assets between residents of a country and the rest of the world for a specified time period, typically a year. There are **two main accounts** in the BoP — the **current account** and the **capital account**.

Note: There is a new classification in which the balance of payments has been divided into **three accounts** — the **current account**, the **financial account**, and the **capital account**. This is as per the new accounting standards specified by the **International Monetary Fund (IMF)** in the sixth edition of the *Balance of Payments and International Investment Position Manual (BPM6)*. **India has also made this change**, but the **Reserve Bank of India** continues to publish data according to the old classification.

6.1.1 Current Account

The **Current Account** is the record of **trade in goods and services** and **transfer payments**. Figure 6.1 illustrates the components of the Current Account.

Components of Current Account:

1.Trade in Goods: Includes **exports and imports of goods**.

2.Trade in Services: Includes

Factor income: Net international earnings on factors of production like **labour, land, and capital**.

Non-factor income: Net sale of **service products** like **shipping, banking, tourism, software services**, etc.

3.Transfer Payments: Receipts received by residents **for free**, without providing any goods or services in return. These include **gifts, remittances, and grants**, and can be from governments or private citizens living abroad.

Buying foreign goods is **expenditure** from our country and becomes **income** for the foreign country. Hence, **imports decrease** domestic demand for goods and services. Conversely, **exports bring income** into the country and **increase aggregate domestic demand**.

Balance on Current Account

The Current Account is **in balance** when **receipts** equal **payments**.

- A **current account surplus** means the nation is a **lender** to other countries.
- A **current account deficit** means the nation is a **borrower** from other countries.

The Balance on Current Account has **two components**:

1. **Balance of Trade (BOT)** or **Trade Balance**
2. **Balance on Invisibles**

1. Balance of Trade (BOT)

BOT is the **difference** between the value of **exports and imports of goods** over a given period.

Exports of goods are entered as a **credit item** in BOT.

Imports of goods are entered as a **debit item** in BOT.Also known as the **Trade Balance**.

BOT is balanced when **exports = imports**.

Surplus BOT or **Trade Surplus**: When exports > imports.

Deficit BOT or **Trade Deficit**: When imports > exports.

2. Balance on Invisibles

Net Invisibles is the **difference between the value of exports and imports of invisibles** (services, transfers, and income flows) in a given period.

Invisibles include:

Services (factor & non-factor income)

Transfers (gifts, grants, remittances)

Income flows between countries

Summary Table: Current Account Status

Current Account Status	Condition
Balanced	Receipts = Payments
Surplus	Receipts > Payments
Deficit	Receipts < Payments

6.1.2 Capital Account

The **Capital Account** records all **international transactions of assets**. An **asset** is any form in which wealth can be held — for example: **money, stocks, bonds, government debt**, etc.

Purchase of assets is a **debit item** on the capital account. *Example*: If an **Indian buys a UK car company**, it is recorded as a **debit** (since **foreign exchange is flowing out of India**).

Sale of assets, such as the **sale of shares of an Indian company to a Chinese customer**, is recorded as a **credit item** on the capital account.

Figure 6.2 classifies the items which are part of capital account transactions. These items include:

Foreign Direct Investments (FDIs)

Foreign Institutional Investments (FIIs)

External borrowings

External assistance

Balance on Capital Account: The **capital account is in balance** when **capital inflows** (e.g., receipts from loans abroad, sale of assets or

shares in foreign companies) are **equal** to **capital outflows** (e.g., repayment of loans, purchase of assets or shares in foreign countries).

A **capital account surplus** occurs when **capital inflows > capital outflows**.

A **capital account deficit** occurs when **capital inflows < capital outflows**.

6.1.3 Balance of Payments 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 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 must be financed by a capital account surplus** — that is, a **net capital inflow**.

Current account + Capital account ≡ 0

In this case, the country is said to be in **balance of payments equilibrium**, where the current account deficit is **entirely financed by international lending**, without any reserve movements.

Alternatively, the country could use its **reserves of foreign exchange** to balance any deficit in its balance of payments. The **Reserve Bank sells foreign exchange** when there is a deficit. This is called an **official reserve sale**.

- A **decrease in official reserves** is called an **overall balance of payments deficit**.
- An **increase in reserves** is called an **overall balance of payments surplus**.

The **monetary authorities** (like the central bank) are thus the **ultimate financiers of any deficit** or the **recipients of any surplus** in the balance of payments.

Note: Official reserve transactions are **more relevant under a fixed exchange rate regime** than under floating exchange rates. (See subsection 'Fixed Exchange Rates' under section 6.2.2)

Autonomous and Accommodating Transactions

Autonomous Transactions: These are international transactions made for **reasons other than to bridge the BoP gap**. They are **independent of the state of the balance of payments**, often carried out for motives like **profit**.Called **'above the line'** items in BoP.

The BoP is said to be in **surplus (deficit)** if **autonomous receipts are greater (less)** than autonomous payments.

Accommodating Transactions: These are determined **by the gap in the BoP**, i.e., they are made to **cover a surplus or deficit**.Called **'below the line'** items in BoP.

Official reserve transactions are considered the main accommodating items in BoP, made to **bridge the gap** left by autonomous transactions.

Errors and Omissions

It is difficult to record all international transactions **accurately**. Hence, BoP includes a third element — **errors and omissions** — to reflect **discrepancies** that may arise in accounting apart from the current and capital accounts.

Illustration of BoP

Table 6.1 provides a sample Balance of Payments for India:

There is a **trade deficit** and a **current account deficit**,

But a **capital account surplus**,

As a result, the **Balance of Payments is in balance**.

Summary Table: BoP Status

BoP Status	Overall Balance	Reserve Change
BoP Deficit	Overall Balance < 0	Reserve Change > 0
Balanced BoP	Overall Balance = 0	Reserve Change = 0
BoP Surplus	Overall Balance > 0	Reserve Change < 0

Change in Classification

The **BoP accounts** above divide transactions into **two accounts** — the **current account** and the **capital account**.

However, following the **new accounting standards** introduced by the **International Monetary Fund (IMF)** in the sixth edition of the *Balance of Payments and International Investment Position Manual (BPM6)*, the **Reserve Bank of India** also made changes.

According to the **new classification**, BoP transactions are divided into **three accounts**:

a. Current Account

b. Financial Account

c. Capital Account

The **most important change** is that **almost all transactions related to trade in financial assets** (like **bonds and equity shares**) are now placed in the **financial account**.

Table 6.1: Balance of Payments for India (in million USD)

No.	Item	Million USD
1.	Exports (of goods only)	150
2.	Imports (of goods only)	240
3.	**Trade Balance [2 – 1]**	**–90**
4.	**Net Invisibles [4a + 4b + 4c]**	**52**
	a. Non-factor Services	30
	b. Income	–10
	c. Transfers	32
5.	**Current Account Balance [3 + 4]**	**–38**
6.	**Capital Account Balance**	**41.15**
	[6a + 6b + 6c + 6d + 6e + 6f]	
	a. External Assistance (net)	0.15
	b. External Commercial Borrowings (net)	2
	c. Short-term Debt	10
	d. Banking Capital (net)	15
	• of which: Non-resident Deposits (net)	9
	e. Foreign Investments (net)	19
	[6eA + 6eB]	
	A. FDI (net)	13
	B. Portfolio (net)	6
	f. Other Flows (net)	–5
7.	Errors and Omissions	3.15
8.	**Overall Balance [5 + 6 + 7]**	**0**

No.	Item	Million USD
9.	Reserves Change	—

6.2 THE FOREIGN EXCHANGE MARKET

So far, we have considered the accounting of international transactions as a whole. We will now take up a single transaction.

Let us assume that a single 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 and at what price. This price is known as the **exchange rate**.

The **foreign exchange market** is the market in which national currencies are traded for one another.

The major participants in the foreign exchange market are:

Commercial banks

Foreign exchange brokers

Other authorised dealers

Monetary authorities

Although participants may have their own trading centres, the market itself is **worldwide**. There is close and continuous contact between trading centres, and participants deal in more than one market.

6.2.1 Foreign Exchange Rate

The **Foreign Exchange Rate** (also called **Forex Rate**) is the **price of one currency in terms of another**.It links the currencies of different countries and enables comparison of international costs and prices.

Example: If we have to pay ₹50 for $1, then the exchange rate is ₹50 per dollar.

To simplify, suppose only **India and the USA** exist, so there is only one exchange rate to be determined.

Demand for Foreign Exchange

People demand foreign exchange for various reasons:

To purchase **goods and services** from other countries

To **send gifts** abroad

To **purchase financial assets** of another country

A **rise in the price of foreign exchange** increases the cost (in rupees) of purchasing a foreign good.This reduces the **demand for imports**, and hence **demand for foreign exchange** also decreases — *ceteris paribus*.

Supply of Foreign Exchange

Foreign currency flows into the home country due to:

- Exports (foreigners buy Indian goods/services)
- Foreigners sending **gifts or transfers**
- Foreigners buying Indian **assets**

A **rise in the price of foreign exchange** reduces the cost (in USD) of purchasing Indian products.This may **increase exports** and thus **increase the supply of foreign exchange**, depending on factors like **price elasticity of exports/imports**.

6.2.2 Determination of the Exchange Rate

Exchange rates can be determined through:

Flexible Exchange Rate

Fixed Exchange Rate

Managed Floating Exchange Rate

Flexible Exchange Rate

Determined by **market forces** of **demand and supply** also called **Floating Exchange Rate**

Central banks **do not intervene** in this system

Equilibrium under Flexible Exchange Rate

The exchange rate is set where **demand = supply** of foreign currency

For example, if initially the rate is ₹50 per dollar and demand for foreign goods rises (say, due to more Indian tourism abroad), the **demand curve shifts right**

New equilibrium: ₹70 per dollar

This means the **rupee has depreciated** against the dollar (We now need more rupees to buy one dollar)

Depreciation of Rupee:

- Value of rupee falls in terms of foreign currency
- Value of foreign currency rises in terms of rupee

Appreciation of Rupee:

- Value of rupee rises in terms of foreign currency
- Value of foreign currency falls in terms of rupee

Speculation

Money is an **asset**, and exchange rates are also influenced by **expectations** of future values. If people believe a foreign currency (e.g., the British pound) will **appreciate**, they may:

Buy pounds now expecting gains later

This **increases current demand** for pounds which in turn **raises the pound's current value** relative to the rupee

Example:
If ₹80 = £1 now, and investors expect it to become ₹85 = £1:

- Investing ₹80,000 to buy 1,000 pounds could result in ₹85,000 return
- Profit: ₹5,000This expectation becomes **self-fulfilling**, causing immediate appreciation.

Interest Rates and the Exchange Rate

In the **short run**, an important factor influencing **exchange rate movements** is the **interest rate differential** — i.e., the difference in interest rates between countries.

There are large funds owned by **banks, multinational corporations,** and **wealthy individuals** that move around the globe seeking the **highest returns**.

Example:

- Government bonds in **Country A** yield **8%**
- Bonds in **Country B** yield **10%**
- Interest rate differential = **2%**

As a result:

Investors from Country A will be attracted to Country B's **higher interest rates**

They will **buy Country B's currency** (and **sell their own**)

Investors in Country B will find it more attractive to invest **domestically**, demanding **less of Country A's currency**

Effect:

Demand for Country A's currency falls → Demand curve shifts **left**

Supply of Country A's currency rises → Supply curve shifts **right**

This causes a **depreciation** of Country A's currency and an **appreciation** of Country B's currency

Conclusion: A **rise in domestic interest rates** often leads to an **appreciation** of the domestic currency — assuming no restrictions on foreign bond investments.

Income and the Exchange Rate

When **income increases**, **consumer spending** rises, including on **imported goods**.

As **imports increase**:

The **demand for foreign exchange** increases → Demand curve shifts **right**

This leads to a **depreciation of the domestic currency**

However, if **foreign incomes** also rise:

Domestic exports increase

Supply of foreign exchange increases → Supply curve shifts **right**

On balance, the domestic currency **may or may not depreciate**. It depends on whether **exports** are growing faster than **imports**.

In general:

If a country's **aggregate demand grows faster** than that of the rest of the world→ **Imports grow faster than exports**→ **Domestic currency tends to depreciate**

Exchange Rates in the Long Run: Purchasing Power Parity (PPP)

The **Purchasing Power Parity (PPP) Theory** helps explain **long-run exchange rate adjustments** in a **flexible exchange rate system**.

According to **PPP**:

In the absence of trade barriers like **tariffs** (trade taxes) and **quotas** (import limits)

Exchange rates should adjust so that **identical goods cost the same** across countries (except for transportation costs)

In the **long run**, exchange rates reflect differences in **price levels** between countries.

Example 6.1:

A **shirt costs**:

$8 in the US

₹400 in India

So, the exchange rate should be:₹400 ÷ $8 = **₹50 per dollar**

Now consider:

Exchange rate = ₹60/$→ Shirt in US: ₹480→ Shirt in India: ₹400**Everyone buys from India**

Exchange rate = ₹40/$→ Shirt in US: ₹320→ Shirt in India: ₹400→ **Everyone buys from the US**

Now suppose:

Prices in **India** increase by **20%** → Shirts cost ₹480

Prices in **US** increase by **50%** → Shirts cost $12

To equalize costs:

₹480 = $12 → New exchange rate: ₹40 per dollar

So, the **dollar has depreciated** relative to the rupee

6.2.3 Merits and Demerits of Flexible and Fixed Exchange Rate Systems

The main feature of the **fixed exchange rate system** is that there must be **credibility** that the government will be able to maintain the exchange rate at the level specified. Often, if there is a **deficit in the Balance of Payments (BoP)**, in a fixed exchange rate system, **governments will have to intervene** to take care of the gap by using their **official reserves**.

If people know that the amount of reserves is **inadequate**, they would begin to **doubt the ability of the government** to maintain the fixed rate. This may give rise to **speculation of devaluation**. When this belief translates into **aggressive buying of one currency**, thereby **forcing the government to devalue**, it is said to constitute a **speculative attack on a currency**. Fixed exchange rates are **prone to these kinds of attacks**, as has been witnessed in the period before the **collapse of the Bretton Woods System**.

The **flexible exchange rate system** gives the government **more flexibility**, and they do not need to maintain **large stocks of foreign exchang reserves**. The major advantage of flexible exchange rates is that **movements in the exchange rate automatically take care of the surpluses and deficits in the BoP**. Also, countries gain **independence in conducting their monetary**

policies, since they do not have to intervene to maintain exchange rates which are **automatically adjusted by the market**.

6.2.4 Managed Floating

Without any formal international agreement, the world has moved on to what can be best described as a **managed floating exchange rate system**. It is a **mixture** of a **flexible exchange rate system** (the *float* part) and a **fixed rate system** (the *managed* part).

Under this system, also called **dirty floating**, **central banks intervene** to buy and sell foreign currencies in an attempt to **moderate exchange rate movements** whenever they feel that such actions are appropriate. As a result, **official reserve transactions are not equal to zero**.