1. The Balance of Payments

To get a complete picture of the linkages among economies, we have to master two related and essential tools. The first one is national income accounting and the second one is balance of payments accounting.

1.1 National Income Accounting

The *gross national product* (GNP) is the value of all final goods and services produced by a country’s factors of production and sold on the market in a given year.

The *gross domestic product* (GDP) is the measure of national activity. GDP equals GNP minus net receipts of factor income from the rest of the world.

A country’s GNP is measured by either the value of all final goods produced or purchased.

\[ Y = C + I + G + EX - IM \]

- **Y:** GNP
- **C:** Consumption
- **I:** Investment
- **G:** Government Purchases
- **EX:** Exports
- **IM:** Imports

A country’s investment is financed either by private savings (PS), public savings (GS), or foreign savings in the domestic economy (-CA).

\[ I = PS + GS - CA \]

- **CA:** Current Account
- **PS:** Private Savings (T is taxes)
- **GS:** Public Savings
1.2 The Balance of Payments (BOP)

The balance of payments is a statistical record of all the flow of payments between residents of one country and the rest of the world in a given year.

The balance of payments (BOP) is composed of three distinct account: the current account, the capital account, and the official international reserves.

*The Current Account (CA)*:

The current account is a statistical record of the trade in goods and services between a country and the rest of the world.

The current account consists of the goods balance, the service balance, the income balance, and the unilateral transfer balance.

**Goods Balance**: (the trade balance) it is a record of trade in goods.

**Service Balance**: it is a record of all trade in services.

**Income Balance**: it is a record of all investment income, the flow of earnings from the different forms of direct and portfolio investments made in prior periods.

**Unilateral Transfer Balance**: it is a record of net transfer payments from abroad with no corresponding flow of goods and services (goodwill).

*The Capital Account (KA)*:

The capital account is a statistical record of investment flows between a country and the rest of the world.

The capital account records transactions that result from nonfinancial and financial assets (both portfolio and direct investment).

*Errors and Omissions (E&O)*:

Errors and omissions reflect transactions that are known to have occurred but for which no specific measure was made.
Official International Reserves ($\Delta RFX$):

The net results of the activities in the current account and the capital account must be financed by changes in official monetary reserves.

These accounts reflect changes in reserve assets (gold, foreign currencies, deposits, securities), use of credit and loans from the IMF (SDRs), liabilities constituting foreign authorities' reserves (changes in private bank liabilities that are held as foreign exchange reserves by central banks of other countries, and exceptional financing.

The Balance of Payments (BOP):

\[ CA + KA + E&O - \Delta RFX = BOP \]

If the balance of payment is in equilibrium, then \( BOP = 0 \).

Accounting Rule:

Transactions with the rest of the world that earn foreign exchange are recorded in the balance of payments statistics as a credit (+).

Transactions with the rest of the world that expend foreign exchange are recorded in the balance of payments statistics as a debit (-).

Example 3.1:  •  The importation by a U.S. firm of maple syrup from Canada is recorded as a debit (-) to the U.S. current account.

Example 3.2:  •  The purchase of British treasury bonds by a U.S. investor is recorded as a debit (-) to the U.S. capital account.

Example 3.3:  •  A purchase of DEM by the Federal Reserve is recorded as an increase in the official reserves of the U.S. ($\Delta RFX > 0$).
The Net International Investment Account:

The Net International Investment (NII) account measures the net ownership of foreign assets.

The BOP is a measure of flows and the NII is the associated stock.

1.3 The BOP Approach to Exchange Rate Determination

Traditionally, the BOP measures were used as evidence of pressure on a country's foreign exchange rate. This evidence must be interpreted in light of the foreign exchange rate regime in place.

Floating Exchange Rates:

Under a floating exchange rate regime, the country's monetary authorities do not intervene to affect the valuation of the exchange rate. Then, $\Delta RFX=0$ and

$$CA + KA = BOP.$$  

According to the theory, an imbalance in the BOP (BOP ≠ 0) will automatically alter the exchange rate in the direction necessary to obtain BOP = 0.

This theory assumes that an appreciation of the domestic currency makes domestic goods and assets more expensive on international markets and, thus, applies downward pressures on the BOP.

Alternatively, if there is a BOP surplus, there is an excess demand of domestic currency to purchase these domestic goods and assets. An appreciation of the home currency makes these goods more expensive, and should diminish this excess demand.

- A BOP surplus (BOP>0) should lead to an appreciation of the home currency (a reduction of the foreign exchange rate).
- A BOP deficit (BOP<0) should lead to a depreciation of the home currency (an increase of the foreign exchange rate).
Example 3.4: The Asian crisis has prompted most investors to move to USD denominated assets. As a result, there is a large positive net portfolio investment in the U.S., leading to a surplus of the KA and of the BOP. According to the theory, this excess demand for U.S. assets should lead to an appreciation of the USD. This would, in turn, make U.S. goods and assets more expensive, and generate downward pressure on the CA and the KA.

**Fixed Exchange Rates:**

Under a fixed exchange rate regime, the country's monetary authorities intervene to prevent exchange rate changes. Accordingly, the monetary authorities will use its reserve of foreign exchange (its official reserves) to ensure that the BOP is in equilibrium:

\[ CA + KA = \Delta RFX \]

Accordingly, when the BOP is in surplus, there is an excess demand for domestic currency to purchase domestic goods. Under a fixed exchange rate regime, the monetary authority will supply this excess demand of domestic currency by purchasing official reserves against domestic currency, thereby creating \( \Delta RFX > 0 \).

- A BOP surplus (\( BOP > 0 \)) should lead to an increase in the reserve of foreign exchange (\( \Delta RFX > 0 \)).
- A BOP deficit (\( BOP < 0 \)) should lead to a reduction in the reserve of foreign exchange (\( \Delta RFX > 0 \)).

If there is an insufficient stock of official international reserves, the country may be forced to devalue its currency.
1.4 The Current Account and Economic Development

The BOP is also used for economic development analysis:

- From a national income viewpoint, a CA deficit might have negative effect on GDP and employment if underemployment exists. If full employment exists, a CA deficit that can be financed abroad would allow the import of investment goods that could not have been obtained.

- From a program viewpoint, economic development requires a net import of goods and services financed by foreign savings. Less developed economies find it nearly impossible to generate sufficient domestic savings or technical and managerial know-how to reach the take-off point without external aid.

- From a liquidity viewpoint, a CA deficit could mean that a country is building up a net long-term creditor position vis-à-vis the rest of the world through direct foreign investments and long-term loans.

1.5 International Capital Flows

Capital flows across countries are typically classified in terms of maturity (short-term versus long-term) and whether the investment represent some form of control over the target investment (portfolio versus direct).

**Short-term Capital Flows:** Short-term debt instruments (e.g., U.S. Treasury bill) have offered relatively high real rates of return at low levels of risk for investor worldwide. Short-term capital tends to follow interest rates.

**Long-term Capital Flows:** Long-term capital flows play a significant role in the BOP structure of many nations. Long-term capital is typically attracted to economic and business environments expected to provide significant long-run stability and economic growth.

**Portfolio Investment:** A portfolio investment is a transaction in which securities are held purely as a financial investment.

**Direct Investment:** Direct Foreign Investment (DFI) is a transaction in which the investor has a controlling share or participates in the management of the firm. The cut-off level of ownership beyond which an investment is classified as direct investment varies across countries, but is usually around 10%.
Capital Flight:

A capital flight is generally a rapid and sometimes illegal transfer of currencies out of a country. Five primary mechanisms exist by which capital may be moved from one country to another:

1. Transfers via the international payments mechanisms. These are just regular bank transfers.

2. Transfer of physical currency by the bearer. This cash smuggling activity is usually illegal.

3. Transfer of cash into collectibles or precious metals.

4. Cross-border purchase of foreign assets that are managed to hide movement of money and ownership (Money Laundering).

5. False invoicing of international trade transactions. Capital is moved via the under-invoicing (over-invoicing) of exports (imports), where the difference between the invoiced amount and the actually agreed-upon payment is deposited in banking institutions in another country. The most typically associated with capital flight.
1.6 **Summary**

- The GNP is the value of all final goods and services produced by a country's factors of production and sold on the market in a given year, while the GDP is the measure of national activity.

- A country's investment is financed either by private savings (PS), public savings (GS), or foreign savings in the domestic economy (-CA).

- The balance of payments is a statistical record of all the flow of payments between residents of one country and the rest of the world in a given year:
  - The current account (CA) is a record of the trade in goods and services between a country and the rest of the world.
  - The capital account (KA) is a statistical record of investment flows between a country and the rest of the world.
  - The net results of the activities in the current account and the capital account must be financed by changes in official monetary reserves ($\Delta RFX$).
  - The accounting rule is that transactions with the rest of the world that earn (expend) foreign exchange are recorded in the balance of payments statistics as a credit (debit).
  - Under a floating exchange rate regime, a BOP surplus (deficit) should lead to an appreciation (depreciation) of the home currency.
  - Under a fixed exchange rate regime, a BOP surplus (deficit) should lead to an increase (reduction) in the reserve of foreign exchange. A BOP surplus may also signal currency devaluation if the reserve of foreign exchange is small.