International Capital Market and Finance

DEECO510

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Unit 01: International Financial Environment

CONTENTS

Objectives

After studying this unit the students will be able to

- Learn about foreign exchange
- Discuss about political risks
- Discuss about market imperfections
- Describe expanded opportunity set

Introduction

The international financial environment refers to the complex and interconnected network of economic and financial relationships among countries and regions around the world. It encompasses a wide range of factors, including trade, investment, foreign exchange rates, capital flows, financial markets, monetary policy, fiscal policy, and global economic institutions. Here are some key aspects of the international financial environment:

1. **Foreign Exchange Markets**: Foreign exchange (forex) markets are where currencies are bought and sold. Exchange rates between currencies can greatly impact international trade, investment, and financial flows. International trade involves the exchange of goods and services across borders. Trade policies, tariffs, and trade agreements influence the movement of goods and the balance of payments between countries.
2. **Investment Flows:** Capital flows refer to the movement of money between countries for investment purposes. Foreign direct investment (FDI) and portfolio investment impact economic growth, job creation, and technology transfer.
3. **Global Financial Markets**: Financial markets, including stock, bond, and commodity markets, connect investors and borrowers from different countries. Movements in these markets can have significant cross-border effects.

4. **Monetary Policy:** Central banks in different countries implement monetary policies that influence interest rates, money supply, and inflation. Changes in one country's monetary policy can affect others through currency exchange rates and capital flows.
5. **Fiscal Policy:** Government spending and taxation policies impact economic growth and stability. Fiscal policies of major economies can have ripple effects across borders.
6. **Global Economic Institutions:** Institutions like the International Monetary Fund (IMF), World Bank, and World Trade Organization (WTO) play roles in maintaining stability, providing financial assistance, and setting rules for global economic interactions.
7. **Financial Crises:** Economic and financial crises can quickly spread across borders due to interconnected financial systems. Examples include the 2008 global financial crisis and the Asian financial crisis of the late 1990s.
8. **Exchange Rate Movements:** Exchange rates between currencies can affect the competitiveness of exports and imports, as well as influence capital flows and investor sentiment.
9. **Globalization:** The increasing interconnectedness of economies and financial systems has been driven by globalization, enabling companies and individuals to access markets and resources beyond their national borders.
10. **Regulatory Frameworks:** Different countries have varying financial regulations and regulatory bodies overseeing their financial systems. Harmonizing these regulations is important for maintaining stability and reducing regulatory arbitrage.
11. **Emerging Markets:** Economies that are in the process of rapid industrialization and economic growth, often referred to as emerging markets, present unique challenges and opportunities in the international financial environment.

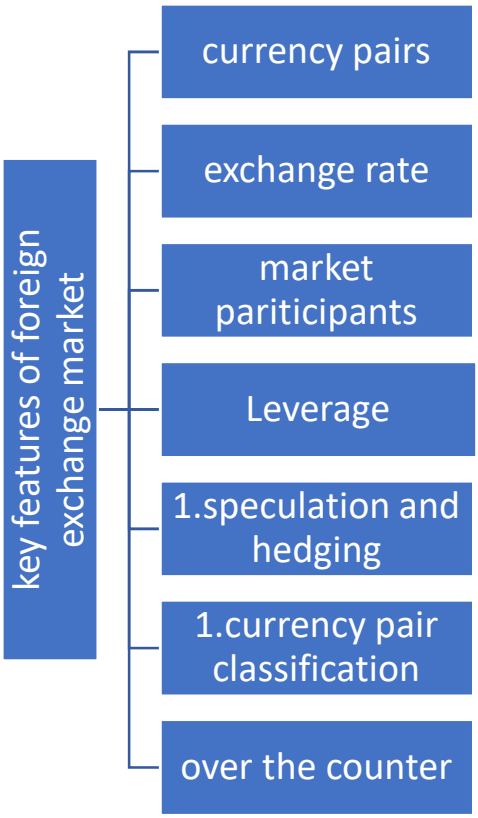
Overall, the international financial environment is highly dynamic and subject to various forces, including economic trends, geopolitical developments, technological advancements, and policy decisions. It requires cooperation and coordination among countries to promote stability, sustainable growth, and mutual prosperity.

Notes: Fiscal policy refers to the use of government spending and tax policies to influence economic conditions, especially macroeconomic conditions. During a recession, the government may lower tax rates or increase spending to encourage demand and spur economic activity. Conversely, to combat inflation, it may raise rates or cut spending to cool down the economy.

Monetary policy is a set of tools used by a nation's central bank to control the overall money supply and promote economic growth and employ strategies such as revising interest rates and changing bank reserve requirements.

1.1 Foreign Exchange and Political Risk

Foreign exchange, often abbreviated as "forex" or "FX," refers to the global marketplace where currencies are traded against each other. It is the largest and most liquid financial market in the world. The primary purpose of the forex market is to facilitate international trade and investment by enabling the conversion of one currency into another.



1. **Currency Pairs**: Currencies are traded in pairs, where one currency is exchanged for another. The first currency in the pair is called the "base currency," and the second currency is the "quote currency." The exchange rate indicates how much of the quote currency is needed to purchase one unit of the base currency.
2. **Exchange Rates:** Exchange rates fluctuate based on various factors such as economic indicators, interest rates, geopolitical events, and market sentiment. These fluctuations can lead to opportunities for traders and investors to profit by buying and selling currencies at the right time.
3. **Market Participants:** The forex market is composed of a variety of participants, including banks, financial institutions, governments, corporations, speculators, and individual traders. Central banks also play a significant role as they can influence exchange rates through their monetary policy decisions.
4. **24-Hour Trading:** The forex market operates 24 hours a day, five days a week, due to the global nature of trading and the different time zones of major financial centers around the world. This continuous trading cycle allows traders to respond to news and events as they happen.
5. **Leverage:** Forex trading often involves the use of leverage, which allows traders to control a larger position size with a relatively smaller amount of capital. While leverage can amplify profits, it also increases the potential for larger losses.
6. **Speculation and Hedging:** Market participants engage in forex trading for various purposes. Some traders speculate on exchange rate movements to make profits, while others use the forex market to hedge against currency risk that arises from international business transactions.
7. **Currency Pairs Classification:** Currency pairs can be categorized into three main groups: major pairs, minor pairs, and exotic pairs. Major pairs involve the most widely traded

currencies (e.g., EUR/USD, USD/JPY), minor pairs feature currencies from smaller economies (e.g., AUD/CAD), and exotic pairs include one major currency and one currency from a developing economy (e.g., USD/SGD).

8. **Over-the-Counter (OTC) Market:** The forex market is decentralized and operates over-the-counter, meaning that there is no central exchange or physical location for trading. Instead, transactions take place electronically through a network of banks and brokers.

Foreign exchange and political risks are two types of risks that can significantly impact international business transactions. Foreign exchange risk, also known as currency risk, is the financial risk that arises from fluctuations in exchange rates between two currencies. This risk can affect companies, investors, and even individuals who engage in international transactions. When conducting international transactions, one currency must be exchanged for another, and the exchange rate between the two currencies can change rapidly and unpredictably due to a variety of factors such as political events, economic indicators, and market sentiment. These fluctuations can affect the value of assets and liabilities denominated in the foreign currency, and can ultimately impact profits and cash flows.

 For example, if a company based in the United States sells goods to a customer in Europe and receives payment in euros, they may be exposed to foreign exchange risk if the value of the euro decreases relative to the U.S. dollar before the company can convert the euros to dollars. In this scenario, the company would receive fewer dollars than anticipated, leading to a potential decrease in revenue and profitability.

Political risk, on the other hand, is the risk of financial loss due to political instability or changes in government policies. This risk can take many forms, such as nationalization of assets, expropriation of property, civil unrest, terrorism, and war. Companies that operate in politically unstable regions or those that depend heavily on government contracts or regulations may be exposed to political risk. For example, if a foreign government nationalizes a company's assets, the company may face significant financial losses. This is due to political risk.

The two risks are often interconnected, as political instability or policy changes can lead to significant fluctuations in a country's currency value.

 For example, if a country experiences a political crisis, investors may sell off their holdings in that country, leading to a drop in the value of the country's currency. To manage these risks, individuals and businesses may use strategies such as hedging, diversification, and political risk insurance.

- Hedging involves using financial instruments such as options or futures contracts to protect against currency fluctuations.
- Diversification involves spreading investments across multiple currencies and countries to reduce exposure to any one risk.
- Political risk insurance provides coverage against losses due to political events such as expropriation, political violence, or contract repudiation.

Overall, foreign exchange and political risks can pose significant challenges for individuals and businesses operating in the global marketplace, and it's important to have a sound understanding of these risks and how to manage them effectively. It is important in international trade for companies or countries to carefully consider both foreign exchange and political risks when conducting business in international markets. Failure to manage these risks can result in significant financial losses and damage to a company's reputation.

1.2 Market Imperfection

Market imperfection refers to situations in which real-world markets do not operate in a perfectly efficient or ideal manner as assumed by economic theory. These imperfections can lead to suboptimal outcomes, inefficient resource allocation, and disparities between theoretical models

and actual market behavior. Market imperfections arise due to various factors that prevent markets from functioning smoothly and optimally. Some common types of market imperfections include:

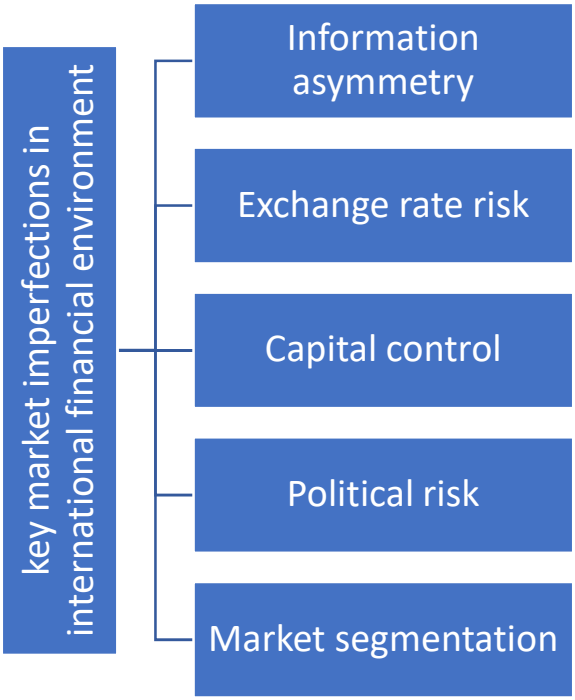
- **Monopoly and Monopsony:** A monopoly occurs when a single firm dominates the market for a particular product or service, giving it significant pricing power. A monopsony, on the other hand, is a situation where a single buyer has market power. In both cases, the lack of competition can lead to higher prices (in the case of a monopoly) or lower prices paid to suppliers (in the case of a monopsony), reducing overall market efficiency.
- **Oligopoly:** An oligopoly is a market structure characterized by a small number of large firms dominating the market. Firms in an oligopoly often engage in strategic behavior, such as price-fixing or collusion, which can distort market outcomes and lead to non-competitive practices.
- **Information Asymmetry:** Information asymmetry occurs when one party in a transaction has more or better information than the other party. This can lead to issues like adverse selection and moral hazard, where one party takes advantage of the lack of information to the detriment of the other party. Insurance markets and used car markets are classic examples of information asymmetry leading to market imperfections.
- **Externalities:** Externalities are costs or benefits that affect parties not directly involved in a transaction. Positive externalities, like education benefiting society beyond the individual, and negative externalities, like pollution affecting the environment, can result in market failures as the true costs or benefits are not accounted for in market transactions.
- **Public Goods:** Public goods are non-excludable and non-rivalrous in consumption, meaning that one person's use of a good does not diminish its availability to others. Public goods like national defense and clean air are often underprovided by the market because individuals may not have an incentive to pay for them voluntarily.
- **Incomplete Markets:** Incomplete markets lack the necessary infrastructure for efficient trading. This can be due to factors like transaction costs, legal restrictions, or lack of well-defined property rights. Incomplete markets can limit access to resources and hinder economic development.
- **Market Power:** Even in competitive markets, some firms may possess a degree of market power that allows them to influence prices. This can lead to inefficient outcomes, such as higher prices or reduced output.
- **Market imperfections** are important considerations in economics, as they can result in market failures and suboptimal resource allocation. Policymakers often intervene to address these imperfections through regulations, antitrust measures, subsidies, taxes, and other interventions aimed at improving market efficiency and achieving more desirable outcomes.

 **Task:** Differentiate between monopoly, monopsony and oligopoly.

The international financial environment refers to the global system of financial markets, institutions, and transactions that enable the flow of capital and other financial resources between countries. This system encompasses a wide range of financial activities, including foreign exchange trading, international lending and borrowing, cross-border investment, and the issuance of international financial instruments such as bonds and stocks.

The international financial environment plays a critical role in facilitating global economic growth and development. By allowing capital to flow across borders, it enables countries to access foreign capital and investment, which can help to finance economic growth and development. The international financial environment also allows investors to diversify their portfolios and manage risk by investing in a range of different countries and financial instruments. The international

financial environment is characterized by market imperfections that can create inefficiencies and distortions in the allocation of resources.



Some of the key market imperfections in the international financial environment include:

- Information asymmetry: Information asymmetry refers to a situation where one party in a transaction has more information than the other party. In the context of international finance, information asymmetry can arise between lenders and borrowers. Lenders may not have complete information about the creditworthiness of borrowers in foreign countries, which can lead to adverse selection and moral hazard problems.
- Exchange rate risk: Exchange rate risk refers to the risk that the value of a foreign currency will change relative to the investor's home currency. This risk can be difficult to hedge and can result in significant losses for investors.
- Capital controls: Some countries impose capital controls, which restrict the flow of capital across their borders. These controls can make it difficult for investors to invest in foreign markets and can limit the ability of domestic firms to access foreign capital.
- Political risk: Political risk refers to the risk that a government will take actions that are detrimental to foreign investors. This can include expropriation of assets, changes in tax laws, and changes in regulations that make it difficult for foreign firms to operate in a country.
- Market segmentation: Market segmentation refers to the tendency for markets to be segmented along national or regional lines. This can make it difficult for firms to access capital in foreign markets and can limit the efficiency of international capital flows. These market imperfections can result in suboptimal outcomes for investors, borrowers, and lenders in the international financial environment.

Policymakers can take steps to reduce these market imperfections, such as promoting greater transparency and information sharing, reducing capital controls, and promoting greater financial integration between countries.

Both foreign exchange and political risks can be mitigated through various strategies, including hedging against currency fluctuations, conducting thorough risk assessments before entering into

business agreements, and diversifying operations across multiple markets to minimize the impact of political risks in any one country.

1.3 Expanded Opportunity Set

In international economics, an expanded opportunity set refers to the increased range of choices available to countries or individuals for engaging in international trade and investment. An expanded opportunity set allows countries to diversify their exports and imports and achieve a higher level of economic growth and development.

An expanded opportunity set in international economics is based on the concept of comparative advantage. Comparative advantage refers to the ability of a country or individual to produce a good or service at a lower opportunity cost than another country or individual.

Did you know?

Who gave the comparative advantage theory?

Comparative advantage theory was given by David Ricardo.

The theory of comparative advantage suggests that countries should specialize in the production of goods and services in which they have a comparative advantage and trade with other countries for goods and services in which they do not have a comparative advantage. This allows countries to increase their welfare by consuming a higher level of goods and services than they would be able to produce domestically.

How is EOS derived?

An expanded opportunity set in international economics is achieved through various means.

1. One way is through the reduction of trade barriers such as tariffs and quotas.
    a. Trade barriers restrict the flow of goods and services across borders and limit the range of choices available to countries for engaging in international trade.
    b. The reduction of trade barriers leads to an increase in the volume and variety of trade, which allows countries to access a wider range of goods and services and diversify their exports and imports.
2. Another way to achieve an expanded opportunity set in international economics is through the establishment of free trade agreements (FTAs) between countries. FTAs eliminate trade barriers between countries and allow for the free flow of goods and services across borders. This leads to an increase in the range of choices available to countries for engaging in international trade and investment.
3. Foreign direct investment (FDI) is another means through which countries can achieve an expanded opportunity set in international economics. FDI involves the establishment of a business in a foreign country, which allows the company to access new markets and resources. FDI can lead to an increase in the range of choices available to countries for engaging in international trade and investment, as the company can export its products or services to other countries and import goods and services from other countries.

Benefits of EOS:

An expanded opportunity set in international economics can lead to various benefits for countries.

1. It allows countries to diversify their exports and imports, which can reduce their exposure to external shocks and increase their economic resilience.

2. An expanded opportunity set can also lead to an increase in productivity, as countries can specialize in the production of goods and services in which they have a comparative advantage.
3. This can lead to an increase in economic growth and development and an improvement in the standard of living for citizens.

Challenges due to EOS

However, an expanded opportunity set in international economics also presents challenges for countries.

1. It can lead to increased competition for domestic firms, which can lead to job losses and reduced profitability.
2. An expanded opportunity set can also lead to increased economic inequality, as certain industries or regions may be negatively affected by increased competition.

In conclusion, an expanded opportunity set in international economics is essential for countries to achieve economic growth and development.

It allows countries to diversify their exports and imports and access a wider range of goods and services. An expanded opportunity set can be achieved through the reduction of trade barriers, the establishment of free trade agreements, and foreign direct investment.

 **Notes:** While an expanded opportunity set presents challenges for countries, the benefits can lead to an improvement in the standard of living for citizens.

Summary

- Foreign exchange (forex) markets are where currencies are bought and sold. Exchange rates between currencies can greatly impact international trade, investment, and financial flows. Trade: International trade involves the exchange of goods and services across borders.
- The forex market is decentralized and operates over-the-counter, meaning that there is no central exchange or physical location for trading. Instead, transactions take place electronically through a network of banks and brokers.
- Foreign exchange risk, also known as currency risk, is the financial risk that arises from fluctuations in exchange rates between two currencies. This risk can affect companies, investors, and even individuals who engage in international transactions. When conducting international transactions, one currency must be exchanged for another, and the exchange rate between the two currencies can change rapidly and unpredictably due to a variety of factors such as political events, economic indicators, and market sentiment.
- Hedging involves using financial instruments such as options or futures contracts to protect against currency fluctuations.
- Market imperfection refers to situations in which real-world markets do not operate in a perfectly efficient or ideal manner as assumed by economic theory. These imperfections can lead to suboptimal outcomes, inefficient resource allocation, and disparities between theoretical models and actual market behavior.
- The international financial environment plays a critical role in facilitating global economic growth and development. By allowing capital to flow across borders, it enables countries to access foreign capital and investment, which can help to finance economic growth and development.

- An expanded opportunity set allows countries to diversify their exports and imports and achieve a higher level of economic growth and development.
- An expanded opportunity set in international economics is based on the concept of comparative advantage. Comparative advantage refers to the ability of a country or individual to produce a good or service at a lower opportunity cost than another country or individual.

Keywords

- Foreign exchange
- Foreign exchange risk
- Political risk
- Foreign direct investment
- Exchange rate risk
- Information asymmetry
- Expanded opportunity set
- Comparative advantage
- Opportunity cost

Self Assessment

1. Which of the following are key aspects of international financial environment?

A. Investment flow
B. Financial crisis
C. Globalization
D. All of the above

2. Central bank of different countries uses the tools of which policy to control fluctuations in the country.

A. Fiscal policy
B. Monetary policy
C. Price policy
D. None of the above

3. Which of the following is primary purpose of foreign exchange market?

A. To facilitate international trade
B. To control fluctuations in the country
C. To increase income of the residents of the country
D. To stabilize income of the residents of the country

4. Which of the following are participants of foreign exchange market?

A. Banks
B. Financial institutions
C. Government
D. All of the above

5. Foreign direct investment (FDI) and portfolio investment can impact
A. Economic growth
B. Job creation
C. Technology transfer.
D. All of the above

6. Which of the following strategies can be used by businessmen to manage the risk?
A. Hedging
B. Diversification
C. Political risk insurance
D. All of the above

7. Political risk insurance provides coverage against losses due to political events like
A. Expropriation
B. Political violence
C. Contract repudiation.
D. All of the above

8. There is a single buyer under
A. Monopoly
B. Monopsony
C. Perfect competition
D. None of the above
9. Positive benefits of education for society is known as
A. Positive externality
B. Negative externality
C. Positive effects
D. None of the above

10. Which of the following are causes of market imperfections in the international financial market?
A. Information asymmetry
B. Exchange rate risk
C. Political risk
D. All of the above

11. An expanded opportunity set is based on the concept of
A. Comparative advantage
B. Absolute advantage
C. Efficiency
D. None of the above

12. Public goods are
A. Non-excludable
B. Non-rival
C. Both a and b

D. None of the above

13. Which good should be produced and export by the country according to comparative advantage theory?

A. A country should produce and export that good in which they have comparative advantage
B. A country should produce and export that good which they can produce at lower opportunity cost
C. A country should produce and export that good in which they have comparative disadvantage
D. Both a and b

14. How expanded opportunity set can be achieved?

A. Through reduction in trade barriers
B. Through formation of free trade agreements
C. Trough foreign direct investment
D. All of the above

15. Which of the following are benefits of expanded opportunity set?

A. It allows countries to diversify their exports and imports
B. An expanded opportunity set can also lead to an increase in productivity
C. This can lead to an increase in economic growth and development
D. All of the above

Answers for Self Assessment

1.	D	2.	B	3.	A	4.	D	5.	D
6.	D	7.	D	8.	B	9.	A	10.	D
11.	A	12.	C	13.	D	14.	D	15.	D

Review Questions

1. Write a detailed note on international financial environment.
2. Critically examine the foreign exchange and political risk.
3. Critically examine the market imperfections.
4. Write a detailed note on expanded opportunity set.
5. Critically examine the benefits expanded opportunity set.

Further Reading

1. International Financial Management By Cheol S Eun And Bruce G Resnick, M.G. Hills
2. International Finance Management By Jeff Madura, Cengage Learning

Unit 02: Globalization of the World Economy

CONTENTS

Objectives

After studying this unit the students will be able to

- Learn about the emergence of globalized financial market
- Discuss about the advent of Euro
- Learn about the sovereign debt crisis of 2010
- Discuss about trade liberalization and economic integration
- Discuss about global financial crisis of 2008-2009

Introduction

Globalization of the world economy refers to the increasing interconnectedness, integration, and interdependence of economies around the world. It involves the movement of goods, services, capital, technology, information, and even cultural elements across borders, leading to a more unified global marketplace. This phenomenon has been facilitated by advancements in technology, communication, transportation, and trade liberalization.

Key aspects of the globalization of the world economy include:

1. International Trade: Globalization has led to a significant increase in international trade. Countries can specialize in producing goods and services in which they have a comparative advantage, leading Foreign Direct Investment (FDI): Companies invest in foreign countries to establish subsidiaries, joint ventures, or acquire assets. This allows for the transfer of technology, expertise, and capital, promoting economic growth in both the host and home countries.

2. Outsourcing and Offshoring: Companies often outsource or offshore certain business functions to take advantage of lower costs in other countries. This can include manufacturing, customer service, and software development.
3. Global Supply Chains: Products are often manufactured using components from different parts of the world. This interconnected production process, known as global supply chains, allows for efficient production and distribution.to higher efficiency and increased availability of products.
4. Financial Integration: The movement of capital across borders has increased through international financial markets. This has both positive effects, such as access to investment opportunities and risk diversification, as well as negative effects, like financial instability during crises.
5. Cultural Exchange: Globalization has led to increased cultural exchange, allowing people to experience and adopt elements of different cultures. This can be seen in the spread of international cuisine, music, fashion, and more.
6. Technological Advances: Advances in communication and information technology have made it easier for people, businesses, and governments to connect, collaborate, and share information across borders.
7. Multinational Corporations (MNCs): MNCs play a central role in globalization, as they operate in multiple countries, leveraging resources and markets globally.
8. Standardization vs. Localization: Globalization often involves a tension between standardization (creating uniform products and practices across countries) and localization (adapting products and practices to local cultures and regulations).
9. Challenges and Controversies: Globalization has sparked debates about its impact on income inequality, labour standards, environmental degradation, and cultural homogenization. Critics argue that it can lead to exploitation of labour in developing countries and loss of local cultural identities.

 **Notes:** In recent years, there has been a growing awareness of the need to balance the benefits of globalization with addressing its challenges. This has led to discussions on fair trade practices, sustainable development, and more equitable distribution of its benefits.

2.1 Emergence of Globalized Financial Market

The emergence of globalized financial markets is a phenomenon that has been taking place since the late 20th century, and it refers to the increasing interconnectedness and integration of financial markets worldwide. This process has been facilitated by technological advancements, financial deregulation, and the liberalization of trade policies, among other factors.

Impacts of globalized financial markets

1. The globalization of financial markets has significantly impacted how financial institutions operate and the economies of the countries in which they are based.
2. It has also increased opportunities for investors to access a broader range of financial products and diversify their portfolios.
3. It has also increased the risk of financial instability and volatility, as financial shocks can now spread rapidly across borders.
4. As financial markets have become more globalized, the role of national governments in regulating them has diminished.

5. This has created challenges for regulators, who must now work together to ensure that financial markets operate in a stable and transparent manner.
6. The increased interconnectedness of financial markets has also meant that financial crises can now spread rapidly across borders, as seen in the 2008 global financial crisis.
7. The globalization of financial markets has also led to increased competition among financial institutions, which has resulted in the development of new financial products and services.

 For example, the growth of global derivatives markets has enabled investors to hedge against a wider range of risks, while the development of online trading platforms has made it easier for retail investors to access financial markets.

Drivers of Globalized Financial Markets

1. One of the main drivers of the globalization of financial markets has been the development of information and communication technologies (ICTs). The widespread adoption of the internet and other forms of electronic communication have made it possible for investors and financial institutions to communicate and conduct transactions across the globe instantaneously. This has enabled the creation of global financial networks that link together financial institutions, investors, and markets in real-time.
2. Another key factor driving the globalization of financial markets has been financial deregulation. This has involved the removal of restrictions on financial institutions and the liberalization of trade policies. In many cases, this has been accompanied by a shift towards market-oriented economic policies and the dismantling of state-controlled financial systems.

Major concerns:

1. One concern is that globalization can lead to increased financial volatility, as financial shocks can now spread rapidly across borders. This can result in large-scale financial crises that can have severe economic consequences, as seen in the 1997 Asian financial crisis and the 2008 global financial crisis.
2. There are also concerns about the impact of globalization on the distribution of wealth and income within and between countries. Critics argue that globalization has led to the concentration of wealth and power in the hands of a small elite while leaving many people behind.
3. There are also concerns that globalization can exacerbate social and economic inequalities within countries, as some regions and sectors benefit more than others.

 **Notes:** The emergence of globalized financial markets has been a significant development in the global economy over the past few decades. While it has created new opportunities for investors and financial institutions, it has also increased the risk of financial instability and volatility. To ensure that global financial markets operate in a stable and transparent manner, it is essential that regulators work together to develop and implement effective regulatory frameworks that take into account the global nature of financial markets.

2.2 Advent of Euro

The Euro is the official currency of the European Union (EU), which is a political and economic union of 27 member states located in Europe. The European Union (EU) is a political and economic union of 27 member states located primarily in Europe. The EU was founded on November 1, 1993, by the Maastricht Treaty. Its predecessor, the European Economic Community (EEC), was

established in 1957. The European Economic Community (EEC) was a regional organization that existed from 1957 to 1993. It was created by the Treaty of Rome, signed by Belgium, France, Italy, Luxembourg, the Netherlands, and West Germany in 1957. The main goal of the EEC was to promote economic integration and cooperation among its member states. The EEC established a common market, also known as the European Single Market, which allowed for the free movement of goods, services, capital, and people between member states. This led to increased trade, investment, and economic growth among member countries. In addition to the common market, the EEC also implemented policies in areas such as agriculture, transport, and energy, and created institutions such as the European Commission, the European Parliament, and the Court of Justice of the European Union.

In 1993, the EEC was replaced by the European Union (EU), with expanded scope to include political and social cooperation in addition to economic integration. The EU has a single market with a standardized system of laws that apply in all member states, ensuring the free movement of goods, services, capital, and people within the EU. The EU is governed by several institutions, including the European Commission, the European Parliament, the Council of the European Union, and the European Court of Justice.

The EU's main objectives are to promote economic and social progress, promote peace and security, protect human rights, and ensure sustainable development. The EU also has its own flag, anthem, and motto: "United in Diversity". Membership in the EU is voluntary, and countries must meet certain criteria, including economic and political stability, before they can join. The EU is currently the world's largest trading bloc and a major global economic and political player. The EU has its own currency, the euro, which is used by 19 of the 27 member states. The Euro was introduced on January 1, 1999, as a virtual currency, and later as a physical currency in January 2002.

The introduction of the Euro was a significant milestone in the history of the EU, with far-reaching consequences for the member states, the European economy, and the world. The idea of a common currency for Europe dates back to the early 1950s when the Treaty of Paris established the European Coal and Steel Community (ECSC), which aimed to integrate the coal and steel industries of six European countries. Creating a single currency for the EU was first proposed in the 1960s, but it was not until the Maastricht Treaty in 1992 that the necessary steps were taken to make it a reality. However, it was not until the late 1980s that the concept of a single European currency gained momentum. In 1986, the Single European Act was signed, which aimed to establish a single market in Europe by 1992. This meant the free movement of goods, services, capital, and people within the EU. In 1991, the Maastricht Treaty was signed, which laid the groundwork for the introduction of the Euro. The treaty outlined the convergence criteria that member states would need to meet to qualify for joining the Eurozone. The criteria included stable inflation rates, low budget deficits, and low levels of government debt. The treaty also established the European Central Bank (ECB), which is responsible for setting monetary policy for the Eurozone. On January 1, 1999, the Euro was introduced as a virtual currency, and it was used for electronic transactions and accounting purposes.

The Euro replaced the European Currency Unit (ECU), which had been used since the 1970s as a unit of account for the European Monetary System (EMS). The introduction of the Euro as a physical currency took place on January 1, 2002. The Eurozone countries had a six-month transition period during which both the Euro and the national currencies were accepted. After this period, the national currencies were no longer legal tender, and the Euro became the sole currency for the Eurozone.

Benefits of EURO:

1. It eliminated exchange rate fluctuations between the member states, making trade and investment easier and more efficient.
2. It reduced the costs of doing business in Europe by eliminating the need for companies to exchange currencies when conducting cross-border transactions.
3. It increased price transparency and competition, as consumers could easily compare prices across different member states.

Challenges of EURO:

One of the biggest challenges was the loss of national sovereignty over monetary policy. Member states had to give up their ability to control their own interest rates and exchange rates, which could have negative consequences during economic downturns. Some member states did not meet the convergence criteria, but they were allowed to join the Eurozone anyway. This led to economic imbalances between the member states, which contributed to the Eurozone debt crisis in 2009.

In conclusion, the introduction of the euro was a major milestone in European integration, and it has had a significant impact on the economies of the EU member states. However, the euro has also faced challenges, including economic crises in some member states and debates about the appropriate level of centralization and coordination within the EU's monetary policy framework.

2.3 Europe's Sovereign Debt Crisis of 2010

The European Sovereign Debt Crisis of 2010 was a period of economic turmoil that affected several European countries, primarily in the Eurozone. It began as a result of the global financial crisis of 2008. The crisis began in late 2009, when Greece announced that it had a much larger budget deficit than previously thought, and that its debt levels were unsustainable. This sparked a panic in financial markets, as investors began to worry that other European countries might be in a similar position.

Bond yields for several countries in Southern Europe began to rise sharply, making it more expensive for them to borrow money. The crisis deepened in May 2010, when the European Union and the International Monetary Fund (IMF) agreed to a bailout package for Greece. This involved loans of €110 billion, in exchange for Greece implementing a series of austerity measures and economic reforms.

The bailout was controversial, as it was seen by many as rewarding Greece for its fiscal mismanagement, and it sparked protests and social unrest in Greece. Over the following years, the crisis spread to other countries in the Eurozone, particularly Ireland, Portugal, Spain, and Italy. These countries also received bailouts from the EU and the IMF, although the size and conditions of these bailouts varied. In some cases, such as Ireland, the bailout was relatively successful, and the country was able to return to growth relatively quickly. In other cases, such as Greece, the bailout was much more difficult, and the country remains in a precarious economic position to this day.

Factors that led to the Crisis:

1. The flawed design of the Eurozone: The Eurozone is a monetary union without a fiscal union, meaning that while countries share a common currency, they have their own fiscal policies. This meant that when the crisis hit, there was no mechanism in place for countries to transfer funds to each other to help them weather the storm.
2. High levels of government debt: Many countries in Eurozone had been running large budget deficits for years, and this was exacerbated by the global financial crisis, which caused a sharp contraction in economic activity and a corresponding decline in government revenues. In addition, some countries, such as Greece, had been understating their debt levels and hiding the true extent of their fiscal problems, which made it difficult for investors to accurately assess their risk.
3. Lack of competitiveness: The crisis was also fueled by a Lack of competitiveness in certain countries, particularly in Southern Europe. Countries such as Greece, Italy, and Spain had become uncompetitive relative to other countries in the Eurozone and the wider global economy. This was due in part to factors such as high labour costs, rigid labour markets, and a lack of investment in infrastructure and education. As a result, these countries struggled to grow their economies and generate the tax revenues needed to service their debts.
4. Lax lending practices of banks: Banks had lent large sums of money to governments and individuals, often without adequate collateral or risk assessment. When the crisis hit and the

value of government bonds and real estate declined, the banks were left with large amounts of bad debt on their books, which contributed to the banking crisis that followed.

Effects of the crisis:

1. The crisis highlighted the weaknesses in the Eurozone's institutional framework and led to a series of reforms aimed at strengthening economic governance and fiscal discipline.
2. It also led to a significant increase in political and social tensions within Europe, particularly between Northern and Southern Europe, and has had lasting effects on the political landscape of many countries in the region.
3. The crisis also had a significant impact on the European economy, leading to a recession that lasted from 2011 to 2013 which led to high levels of unemployment.

In conclusion, the European Sovereign Debt Crisis of 2010 was a significant event in the economic history of Europe. It highlighted the flaws in the design of the Eurozone and the need for greater fiscal integration within the Eurozone. It also demonstrated the dangers of lax lending practices and the importance of responsible fiscal management. The crisis had a significant impact on the affected countries and the wider European economy, leading to a recession and political turmoil.

2.4 Trade Liberalization and Economic Integration

Trade liberalization and economic integration are two related concepts that have become increasingly important in the modern global economy. Trade liberalization refers to reducing or eliminating trade barriers, such as tariffs, quotas, and other restrictions, to promote the free flow of goods and services between countries.

Economic integration refers to the process of deepening economic ties between countries, often through the establishment of regional trade agreements or free trade agreements, in order to create a more integrated economic system.

The objective of trade liberalization is to increase the volume of trade between countries, leading to greater specialization and efficiency, increased consumer choice, and ultimately higher economic growth. It is believed that trade liberalization can lead to a more competitive and productive economy, as firms are forced to compete with each other and become more efficient.

Economic integration goes beyond trade liberalization by also promoting greater cooperation and coordination between countries in areas such as investment, labour, and environmental standards. Economic integration can create economies of scale, reduce transaction costs, and increase the flow of goods, services, and capital between countries. It can also help to promote regional stability and reduce the risk of conflict.

 Examples of economic integration:- The European Union (EU), The North American Free Trade Agreement (NAFTA), and The Association of Southeast Asian Nations (ASEAN).

European Union:

The European Union is a supranational political and economic union of 27 member states of Europe; founded in November 1, 1993, Maastricht, Netherlands. Founders: Germany, France, Italy, Netherlands, Belgium, Luxembourg.

The North American Free Trade Agreement (NAFTA):

The North American Free Trade Agreement (NAFTA) enacted in 1994 and created a free trade zone for Mexico, Canada, and the United States.

The Association of Southeast Asian Nations (ASEAN):

ASEAN is a political and economic union of 10 member states in Southeast Asia, which facilitates economic, political, security, military, educational, and sociocultural integration among its members. These agreements have created common markets, established common regulations, and removed trade barriers, resulting in increased trade, investment, and economic growth.

Benefits of trade liberalization and economic integration:

1. One of the main benefits is increased trade, which can lead to greater specialization and efficiency, increased consumer choice, and ultimately higher economic growth. When countries open up their markets to one another, they can benefit from each other's strengths and compete more effectively with other countries. This can lead to greater innovation, as firms are forced to become more efficient and develop new products and services to stay competitive.
2. Another potential benefit of trade liberalization and economic integration is increased investment. When countries have greater economic ties, it becomes easier for firms to invest in other countries and for investors to move capital around the world.
   This can lead to increased foreign direct investment, which can help to create jobs and spur economic growth.
3. Trade liberalization and economic integration can also help to promote regional stability and reduce the risk of conflict. When countries are economically integrated, they have a greater stake in each other's success and are less likely to engage in conflict.
   This can help to promote peace and stability in regions that have a history of conflict or tension.

Drawbacks of trade liberalization and economic integration:

1. One of the main concerns is that it can lead to job losses and lower wages in certain industries, as firms move production to countries with lower labour costs. This can lead to economic dislocation and social unrest, particularly in industries that are heavily affected by trade liberalization.
2. Another potential drawback is that trade liberalization and economic integration can lead to greater inequality within and between countries. While some firms and individuals may benefit from increased trade and investment, others may be left behind. This can lead to greater economic disparities, which can undermine social cohesion and lead to political instability.
3. Finally, trade liberalization and economic integration can also undermine national sovereignty and reduce the ability of governments to regulate their own economies. When countries open up their markets to one another, they may be forced to adopt regulations and standards that are determined by other countries.
   This can limit the ability of governments to regulate their own economies and protect their own citizens.
   Overall, the benefits and drawbacks of trade liberalization and economic integration depend on a variety of factors, including the specific policies implemented, the industries affected, and the broader economic and political context. While trade liberalization and economic integration can bring many benefits, they can also create challenges that need to be carefully managed in order to promote inclusive and sustainable economic growth.

2.5 Global Financial Crisis of 2008-2009

The Global Financial Crisis of 2008-2009 was a severe economic crisis that affected many countries around the world. The origins of the crisis can be traced back to the US housing market, which began to boom in the late 1990s. Low-interest rates, lax lending standards, and financial innovations such as securitization fueled a housing bubble that continued to grow until 2006-2007. The bubble was characterized by a surge in demand for housing, which led to a corresponding rise in housing prices. Financial institutions, including banks and investment firms, were eager to capitalize on this trend by investing heavily in mortgage-backed securities (MBS) and collateralized debt obligations (CDOs).

The growth of the housing bubble and the proliferation of MBS and CDOs led to a dramatic expansion of credit in the US economy. Banks and other financial institutions became increasingly aggressive in their lending practices, offering loans to subprime borrowers with little or no credit history. These loans were often made with little regard for the borrower's ability to repay, and in many cases, they were bundled into complex financial instruments that were sold to investors around the world. As the housing bubble continued to grow, the risks associated with these investments became more apparent.

By 2007, the number of defaults on subprime mortgages had increased dramatically, leading to a significant decline in the value of MBS and CDOs.

The decline in value of these securities created a ripple effect throughout the global financial system, as many banks and investment firms had invested heavily in them.

The crisis reached its peak in September 2008, when Lehman Brothers, one of the largest investment banks in the US, filed for bankruptcy.

This event triggered a wave of panic in the financial markets, leading to a freeze in lending and a widespread loss of confidence in the global financial system. Many other financial institutions were also affected, with some requiring government bailouts to prevent collapse.

Causes of the Crisis:

1. Subprime Mortgage Crisis: One of the main causes of the Global Financial Crisis was the subprime mortgage crisis in the United States. It started in the early 2000s when banks started offering home loans to people with low credit scores and little or no down payment. These subprime loans were then packaged into securities and sold to investors worldwide. When the housing bubble burst in 2006-2007, many homeowners defaulted on their loans, leading to a sharp decline in the value of these securities.
2. Securitization: The securitization of subprime mortgages also played a significant role in the crisis. Banks and other financial institutions packaged these subprime loans into mortgage-backed securities (MBS) and collateralized debt obligations (CDOs). These securities were then sold to investors worldwide, often with high credit ratings. However, many of these securities were based on mortgages that were likely to default, and their value plummeted when the housing bubble burst.
3. Deregulation: Deregulation of the financial sector in the 1990s and 2000s also contributed to the crisis. Financial institutions were allowed to engage in risky activities, such as derivatives trading and proprietary trading, without adequate oversight. This led to excessive risk-taking and a buildup of systemic risk in the financial system.
4. Credit Rating Agencies: Credit rating agencies also played a role in the crisis by giving high credit ratings to securities that were based on risky subprime mortgages. This gave investors a false sense of security and led to a mispricing of risk in the financial system.

Impacts and Consequences of the Crisis:

1. The crisis started in the United States but quickly spread to other countries, as many of the complex financial instruments that were created were sold to investors around the world.
2. The crisis also had a significant impact on the banking sector, with many large banks and financial institutions experiencing significant losses and facing bankruptcy.
3. The crisis had a social impact, leading to increased inequality and social unrest in many countries.
4. The crisis also had a significant impact on the housing market, with property values declining sharply in many areas, leading to a large number of foreclosures and a glut of unsold homes.
5. Recession: The crisis led to a severe recession in the US and many other countries, as banks tightened their lending standards, and consumers and businesses cut back on spending.
6. Unemployment: The recession led to a sharp rise in unemployment, as companies laid off workers to cut costs.
7. Government Bailouts: To prevent a complete collapse of the financial system, governments around the world implemented massive bailout programs, injecting trillions of dollars into banks and other financial institutions. The Federal Reserve, the European Central Bank, and other central banks around the world lowered interest rates and provided funding to banks to ensure that they had enough liquidity to continue lending. This somehow helped to stabilize the financial system and prevent a complete collapse of the banking sector. In the United States, the government implemented the American Recovery and Reinvestment Act, which provided $787 billion in stimulus spending to help create jobs and support economic growth. Other countries, such as China and Germany, also implemented large stimulus packages to help support their economies.
8. Austerity measures: In the aftermath of the crisis, many governments implemented austerity measures to reduce their budget deficits, leading to cuts in public spending and social programs.
9. Increased regulation: The crisis led to a renewed focus on regulation and oversight of financial markets, with the implementation of new rules and regulations aimed at reducing systemic risk. For example, the Dodd-Frank Wall Street Reform and Consumer Protection Act was passed in the US, which introduced a range of measures aimed at regulating the financial industry and reducing systemic risk.

Lessons learned from the Crisis:

The GFC highlighted a number of important lessons for policymakers and the financial industry, including:

1. Importance of regulation: The crisis showed the importance of effective regulation and oversight of financial markets to prevent excessive risk-taking and the accumulation of systemic risks.
2. Need for transparency: The crisis highlighted the need for greater transparency in financial markets, particularly in the use of complex financial instruments.
3. Risk management: The crisis showed the importance of effective risk management practices in financial institutions to ensure they have adequate capital buffers to withstand shocks to the financial system.
4. Interconnectedness: The crisis highlighted the interconnectedness of financial markets and the need for global coordination in the regulation and oversight of financial markets.

In conclusion, the GFC of 2008-2009 was a significant event in modern financial history, caused by a combination of factors including the housing bubble, lax lending standards, and financial

innovation. The crisis had far-reaching effects on the global economy, leading to job losses, reduced economic growth, and social unrest. Governments and central banks responded with a range of policy measures, and the crisis led to a significant overhaul of the global financial system.

Summary

- Globalization has led to a significant increase in international trade. Countries can specialize in producing goods and services in which they have a comparative advantage, leading Foreign Direct Investment (FDI): Companies invest in foreign countries to establish subsidiaries, joint ventures, or acquire assets. This allows for the transfer of technology, expertise, and capital, promoting economic growth in both the host and home countries.
- The emergence of globalized financial markets is a phenomenon that has been taking place since the late 20th century, and it refers to the increasing interconnectedness and integration of financial markets worldwide. This process has been facilitated by technological advancements, financial deregulation, and the liberalization of trade policies, among other factors.
- The globalized financial market has increased opportunities for investors to access a broader range of financial products and diversify their portfolios. It has also increased the risk of financial instability and volatility, as financial shocks can now spread rapidly across borders.
- The European Union (EU) is a political and economic union of 27 member states located primarily in Europe. The EU was founded on November 1, 1993, by the Maastricht Treaty. Its predecessor, the European Economic Community (EEC), was established in 1957. The European Economic Community (EEC) was a regional organization that existed from 1957 to 1993. It was created by the Treaty of Rome, signed by Belgium, France, Italy, Luxembourg, the Netherlands, and West Germany in 1957. The main goal of the EEC was to promote economic integration and cooperation among its member states.
- The European Sovereign Debt Crisis of 2010 was a period of economic turmoil that affected several European countries, primarily in the Eurozone. It began as a result of the global financial crisis of 2008. The crisis began in late 2009, when Greece announced that it had a much larger budget deficit than previously thought, and that its debt levels were unsustainable. This sparked a panic in financial markets, as investors began to worry that other European countries might be in a similar position.
- Trade liberalization and economic integration are two related concepts that have become increasingly important in the modern global economy. Trade liberalization refers to reducing or eliminating trade barriers, such as tariffs, quotas, and other restrictions, to promote the free flow of goods and services between countries.
- Economic integration refers to the process of deepening economic ties between countries, often through the establishment of regional trade agreements or free trade agreements, in order to create a more integrated economic system.
- The Global Financial Crisis of 2008-2009 was a severe economic crisis that affected many countries around the world. The origins of the crisis can be traced back to the US housing market, which began to boom in the late 1990s. Low-interest rates, lax lending standards, and financial innovations such as securitization fueled a housing bubble that continued to grow until 2006-2007. The bubble was characterized by a surge in demand for housing, which led to a corresponding rise in housing prices. Financial institutions, including banks and investment firms, were eager to capitalize on this trend by investing heavily in mortgage-backed securities (MBS) and collateralized debt obligations (CDOs).

Keywords

- Globalization
- Financial market
- Crisis
- Economic integration
- Trade liberalization
- European union
- Deregulation
- Recession

Self Assessment

1. Which of the following are aspects of globalization?

A. International trade
B. Technological advancement
C. Financial integration
D. All of the above

2. Globalization of financial market led to

A. Increase in interconnectedness
B. Integration of financial market
C. Increase in trade barriers
D. Both a and b

3. What are the different impacts of globalized financial market?

A. It has increased opportunities for investors to access a broader range of financial products.
B. It has increased the risk of financial instability
C. It has increased the risk of financial volatility
D. All of the above

4. Which of the following are the main goals of the European economic community?

A. To promote economic integration and cooperation among its member states
B. To peace and security
C. To increase non-tariff barriers
D. Both a and b

5. Which of the following are benefits of EURO?

A. It made trade and investment easier and more efficient.
B. It reduced the costs of doing business in Europe by eliminating the need for companies to exchange currencies when conducting cross-border transactions.
C. It increased price transparency and competition
D. All of the above

6. EURO replaced the

A. European currency unit

B. Dollar
C. Indian Rupee
D. None of the above

7. Which of the following factors causes sovereign debt crisis?
A. High level of debt
B. Lack of competitiveness
C. Lax lending practices of banks
D. All of the above

8. Elimination of trade barriers is known as
A. Trade liberalization
B. Closed economy
C. Trade reduction
D. None of the above

9. Which of the following are examples of economic integration?
A. NAFTA
B. EU
C. ASEAN
D. All of the above

10. How trade liberalization is beneficial?
A. It increases investment
B. It increases foreign direct investment
C. It increases employment opportunities
D. All of the above

11. Why there was a global financial crisis of 2008-09?

Sub prime mortgage crisis

Deregulation

Credit rating agencies

All of the above

12. Which of the following countries are member of NAFTA?
A. Mexico
B. Canada
C. India
D. Both a and b

13. which of the following were consequences of global financial crisis of 2008-09?
A. It has effected the banking sector
B. It increased inequality
C. Increased social unrest
D. All of the above

14. Is India member of NAFTA?

A. Yes

B. No

15. Is India a member of ASEAN?

A. Yes

B. No

Answers for Self Assessment

1.	D	2.	D	3.	D	4.	D	5.	D
6.	A	7.	D	8.	A	9.	D	10.	D
11.	D	12.	D	13.	D	14.	B	15.	B

Review Questions

1. Critically examine the impacts of globalized financial market.
2. Write a detailed note on the benefits and challenges faced by EURO.
3. Critically examine the factors which causes sovereign debt crisis of 2010.
4. What is trade liberalization. Write a detailed note on the benefits of trade liberalization.
5. Critically examine the global financial crisis of 2008-09.

Further Reading

1. International Financial Management By Cheol S Eun And Bruce G Resnick, M.G. Hills
2. International Finance Management By Jeff Madura, Cengage Learning

Unit 03: International Financial Market

CONTENTS

Objectives

- Discuss about financial market
- Learn about foreign exchange market
- Learn about foreign exchange quotations

Introduction

Each country in the world has its own currency. An important exception is the eurozone which consists of 19 European countries that adopted the euro as their currency. When MNCs and individuals engage in international transactions, they commonly need to exchange their local currency for a foreign currency, or exchange a foreign currency for their local currency. The foreign exchange market allows for the exchange of one currency for another. Large commercial banks serve this market by holding inventories of each currency so that they can accommodate requests by individuals or MNCs for currency for various transactions. Individuals rely on the foreign exchange market when they travel to foreign countries. People from the United States exchange dollars for Mexican pesos when they visit Mexico, euros when they visit Italy, or Japanese yen when they visit Japan. Some MNCs based in the United States exchange dollars for Mexican pesos when they purchase supplies in Mexico that are denominated in pesos, or exchange them for euros when they purchase supplies from Italy that are denominated in euros. Other MNCs based in the United States receive Japanese yen when selling products to Japan and may wish to convert those yen to dollars. In addition, some individuals and financial institutions speculate in the foreign exchange market by exchanging their local currency for a foreign currency that they believe will increase in value over time. At any point in time, there is an exchange rate between any two currencies that specifies the rate at which one currency can be exchanged for another. In essence, the exchange rate represents the price at which one currency can be purchased with another currency. If the exchange rate of the Mexican peso is $.10, the cost of your spring break hotel in Mexico that charges 700 pesos per night would be 700x $.10= $70. If the exchange rate was higher (such as one peso= $.11), your cost in dollars would be higher. The exchange rate of the Mexican peso will also determine how many dollars an MNC will need to purchase supplies that are invoiced at 1 million pesos.

3.1 History of Foreign Exchange

The system for establishing exchange rates has changed over time. It has evolved from the gold standard to an agreement on fixed exchange rates to a floating rate system.

Gold Standard From 1876 to 1913: exchange rates were dictated by the gold standard. Each currency was convertible into gold at a specified rate. Thus the exchange rate between two currencies was determined by their relative convertibility rates per ounce of gold. Each country used gold to back its currency. When World War I began in 1914, the gold standard was suspended. Some countries reverted to the gold standard in the 1920s but abandoned it as a result of the U.S. and European banking panic during the Great Depression. In the 1930s, some countries attempted to peg their currency to the dollar or the British pound, but there were frequent revisions. As a result of instability in the foreign exchange market and the severe restrictions on international transactions during this period, the volume of international trade declined.

Agreements on Fixed Exchange Rates: In 1944, an international agreement among many countries (known as the Bretton Woods Agreement) called for fixed exchange rates between currencies. An exchange rate was set for each pair of currencies, and each country's central bank was required to maintain its respective local currency's value within 1 percent of the agreed-upon exchange rates. For example, when the U.S. demand for a specific foreign currency was much stronger than the supply of that currency for sale, the commercial banks that served the foreign exchange market would experience a shortage of foreign currency, and the exchange rate would start to move outside the boundaries. Under these conditions, the Federal Reserve (the central bank of the United States) was required to intervene to balance the exchange between the two currencies so that the exchange rate would remain stable. The system established by the Bretton Woods Agreement lasted until 1971.

By 1971 the U.S. dollar had apparently become overvalued, as the U.S. demand for some foreign currencies was substantially more than the supply of those currencies offered in exchange for dollars. Intervention by central banks could not effectively offset the large imbalance between demand and supply. Representatives from the major nations met to discuss this dilemma. This conference resulted in the Smithsonian Agreement, whereby the U.S. dollar's value was devalued (reset downward) relative to the other major currencies. The degree to which the dollar was devalued varied with each foreign currency. Not only was the dollar's value reset, but exchange rates were also allowed to fluctuate by 2.25 percent in either direction from the newly set rates. These boundaries of 2.25 percent were wider than the previous boundaries (of 1 percent) and thus enabled exchange rates to move within a wider range.

Floating Exchange Rate System Even with the wider bands allowed by the Smithsonian Agreement, governments still had difficulty maintaining exchange rates within the stated boundaries. By March 1973, the official boundaries imposed by the Smithsonian Agreement were eliminated, thereby allowing exchange rates to move more freely. Since that time, the currencies of most countries have been allowed to fluctuate in accordance with market forces; however, some countries' central banks still periodically intervene in the foreign exchange market to influence the market-determined exchange rate or reduce the volatility in their respective currency's exchange rate movements.

Foreign Exchange Transactions

The foreign exchange market should not be thought of as a specific building or location where traders exchange currencies. Companies normally exchange one currency for another through a commercial bank over a telecommunications network; this is an over the-counter market through which many transactions occur. The largest foreign exchange trading centers are in London, New York, and Tokyo, but foreign exchange transactions occur on a daily basis in cities around the world. London accounts for about 33 percent of the trading volume and New York City for about 20 percent. Thus these two markets control more than half the currency trading in the world.

Foreign Exchange Dealers serve as intermediaries in the foreign exchange market by exchanging currencies desired by MNCs or individuals. Foreign exchange dealers include large commercial banks such as Citigroup, JPMorgan Chase & Co., Barclays (United Kingdom), UBS (Switzerland), and Deutsche Bank (Germany). Dealers such as these have branches in most major cities and also facilitate foreign exchange transactions with an online trading service. Dealers that rely exclusively on online trading to facilitate such transactions include FX Connect (a subsidiary of State Street Corporation), OANDA (Canada), and XE.com (Canada). Customers establish an online account and can interact with the foreign exchange dealer's website to transmit their foreign exchange order.

In recent years, new trading platforms have been established that allow some MNCs to engage in foreign exchange transactions directly with other MNCs, thereby eliminating the need for a foreign exchange dealer. An MNC that subscribes to such a platform can indicate to the platform's other users whether it wants to buy or sell a particular currency as well as the volume desired. Some MNCs continue to use a foreign exchange dealer, often because they prefer personal attention or require more customized transactions than can be handled via trading platforms.

The average daily trading volume in the foreign exchange market now exceeds $5 trillion. The U.S. dollar is involved in about 40 percent of those transactions, and currencies from emerging countries are involved in about 20 percent of them. Most currency transactions between two non-U.S. countries do not involve the U.S. dollar. For example, a Canadian MNC that purchases supplies from a Mexican MNC exchanges its Canadian dollars for Mexican pesos; likewise, a Japanese MNC that invests funds in a British bank exchanges its Japanese yen for British pounds.

Spot Market: The most common type of foreign exchange transaction is for immediate exchange. The market where these transactions occur is known as the spot market. The exchange rate at which one currency is traded for another in the spot market is known as the spot rate.

Spot Market Structure: Commercial transactions in the spot market are often completed electronically with banks or other financial institutions serving as intermediaries. The exchange rate at the time determines the amount of funds necessary for the transaction.

 For example: Indiana Co. purchases supplies priced at 100,000 euros (€) from Belgo, a Belgian supplier, on the first day of every month. Indiana instructs its bank to transfer funds from its account to Belgo's account on the first day of each month. It only has dollars in its account, whereas Belgo's account balance is denominated in euros. When payment was made last month, the euro was worth $1.08; hence Indiana Co. needed $108,000 to pay for the supplies (€100,000 x $1.08= $108,000). The bank reduced Indiana's account balance by $108,000, which was exchanged at the bank for €100,000. The bank then sent the €100,000 electronically to Belgo by increasing Belgo's account balance by €100,000. Today, a new payment needs to be made. The euro is currently valued at $1.12, so the bank will reduce Indiana's account balance by $112,000 (€100,000 x $1.12= $112,000) and exchange it for €100,000, which will be sent electronically to Belgo. In this way, the bank not only executes the transactions but also serves as the foreign exchange dealer. Each month the bank receives dollars from Indiana Co. in exchange for the euros it provides. In addition, the bank facilitates other transactions for MNCs in which it receives euros in exchange for dollars. The bank maintains an inventory of euros, dollars, and other currencies to facilitate these foreign exchange transactions. If the transactions cause it to buy as many euros as it sells to MNCs, then its inventory of euros will not change. However, if the bank sells more euros than it buys, then its inventory of euros will be reduced.

If a bank begins to experience a shortage of a particular foreign currency, it can purchase that currency from other banks. This trading between banks occurs in what is often referred to as the interbank market. Some other financial institutions, such as securities firms, can provide the same services described in the previous example. Most major airports around the world also have foreign exchange centers where individuals can exchange currencies. Many cities also have retail foreign exchange offices where tourists and other individuals can exchange their currency.

Use of the Dollar in Spot Markets: The U.S. dollar is accepted as a medium of exchange by merchants in many countries; this is especially true in countries (such as Bolivia, Indonesia, Russia, Vietnam) where the home currency is weak or subject to foreign exchange restrictions. Many merchants accept U.S. dollars because they can easily use them to purchase goods from other countries.

Spot Market Time Zones: Although foreign exchange trading is conducted only during normal business hours at a given location, such hours vary among locations because of different time zones. Thus, at any given weekday time, a bank located somewhere in the world is open and ready to accommodate foreign exchange requests by MNCs. When the foreign exchange market opens in the United States each morning, the opening exchange rate quotations are based on the prevailing rates quoted by banks in London (and other locations), where the markets have opened earlier. Suppose the quoted spot rate of the British pound was $1.80 at the previous close of the U.S. foreign exchange market but, by the time the U.S. market opens the following day, the spot rate is $1.76. Events occurring before the U.S. market opened could have changed the supply and demand conditions for British pounds in the London foreign exchange market, reducing the quoted price for the pound. Several U.S. banks have established so-called night trading desks. The largest banks

initiated night trading to capitalize on overnight foreign exchange movements and to accommodate corporate requests for currency trades. Even some medium-sized banks now offer night trading as a way of accommodating their corporate clients.

Spot Market Liquidity: The spot market for each currency is characterized by its liquidity, which reflects the level of trading activity. The more buyers and sellers there are for a currency, the more liquid the market for that currency is. The spot markets for heavily traded currencies such as the euro, the pound, and the yen are extremely liquid. In contrast, the spot markets for currencies of less developed countries are much less liquid. A currency's liquidity affects the ease with which it can be bought or sold by an MNC. If a currency is illiquid, then the number of willing buyers and sellers is limited and so an MNC may be unable to purchase or sell that currency in a timely fashion and at a reasonable exchange rate.

 For example Bennett Co. sold computer software to a firm in Peru and received payment of 10 million units of the nuevo sol (Peru's currency). Bennett Co. wanted to convert these units into dollars. The prevailing exchange rate of the nuevo sol at the time was $.36. However, the company's bank did not want to receive such a large amount of nuevo sol because it did not expect any of its customers to need that currency. The bank was therefore willing to exchange dollars for the nuevo sol only at the lower exchange rate of $.35.

Attributes of Banks That Provide Foreign Exchange The following characteristics of banks are important to customers (such as MNCs) in need of foreign exchange.

1. Competitiveness of quote. A savings of $.01 per unit on an order of 1 million units of currency is worth $10,000.
2. Special relationship with the bank. The bank may offer cash management services or be willing to make a special effort to obtain hard-to-find foreign currencies for the corporation.
3. Speed of execution. Banks may vary in the efficiency with which they handle an order. A corporation needing the currency will prefer a bank that conducts the transaction promptly and also handles any paperwork properly.
4. Advice about current market conditions. Some banks may provide assessments of foreign economies and relevant activities in the international financial environment that relate to corporate customers.
5. Forecasting advice. Some banks may provide forecasts of the future state of foreign economies and the future value of exchange rates. The preceding list suggests that a corporation in need of a foreign currency should not automatically choose the bank that sells that currency at the lowest price. Most MNCs that frequently need foreign currencies develop a close relationship with at least one major bank in case they need various foreign exchange services from a bank.

Bid/Ask Spread of Banks Commercial banks charge fees for conducting foreign exchange transactions; thus they buy a currency from customers at a slightly lower price than the price at which they sell it. This means that a bank's bid price (buy quote) for a foreign currency will always be less than its ask price (sell quote). The difference between the bid and ask prices is known as the bid/ask spread, which is meant to cover the costs associated with fulfilling requests to exchange currencies. A larger bid/ ask spread generates more revenue for commercial banks, but represents a higher cost to individuals or MNCs that engage in foreign exchange transactions. The bid/ask spread is normally expressed as a percentage of the ask quote.

 For example

To understand how a bid/ask spread could affect you, assume you have $1,000 and plan to travel from the United States to the United Kingdom. Assume further that the bank's bid rate for the British pound is $1.52 and its ask rate is $1.60. Before leaving on your trip, you go to this bank to exchange dollars for pounds. Your $1,000 will be converted to 625 pounds (£), as follows:

=Amount of U:S dollars to be converted

Price charged by bank per pound ¼

$1,000

$1:60 ¼ = £625

Now suppose that an emergency prevents you from taking the trip and so you now want to convert the £625 back into U.S. dollars. If the exchange rate has not changed, then you will receive only

£625 x (Bank's bid rate of $1:52 per pound)= $950

Because of the bid/ask spread, you have $50 (5 percent) less than when you started. Of course, the dollar amount of your loss would be greater if you had originally converted more than $1,000 into pounds.

Comparison of Bid/Ask Spread among Currencies: The difference between a bid quote and an ask quote will look much smaller for currencies of lesser value. This differential can be standardized by measuring the spread as a percentage of the currency's spot rate.

The bid/ask spread in percentage terms is typically computed as follows:

Bid/ask spread= Ask rate - Bid rate/ask rate

This formula is used to compute the bid/ask spreads in table 1 for both the British pound and the Japanese yen.

Table 1: Computation of bis/ask spread

CURRENCY	BID RATE	ASK RATE	ASK RATE − BID RATE / ASK RATE	=	BID/ASK PERCENTAGE SPREAD
British pound	$1.52	$1.60	$1.60 − $1.52 / $1.60	=	.05 or 5%
Japanese yen	$0.0070	$0.0074	$0.0074 − $.007 / $.0074	=	.054 or 5.4%

Such spreads are common for retail transactions (i.e., those serving consumers). For the larger wholesale transactions between banks or involving large corporations, the spread will be much smaller. The bid/ask spread for retail transactions is usually in the range of 3 to 7 percent; for wholesale transactions requested by MNCs, the spread is between .01 and .03 percent. The spread is normally larger for illiquid currencies that are less frequently traded. The bid/ask spread as defined here represents the discount in the bid rate as a percentage of the ask rate. An alternative bid/ask spread uses the bid rate (instead of the ask rate) as the denominator and thus measures the percentage markup of the ask rate above the bid rate. The spread is slightly higher when using this formula because the bid rate used in the denominator is always less than the ask rate.

In the following discussion, and in examples throughout much of the text, the bid/ ask spread will be ignored. That is, only one price will be shown for a given currency so that you can concentrate on understanding other relevant concepts. These examples depart slightly from reality because the bid and ask prices are, in a sense, assumed to be equal. Although in reality the ask price will always exceed the bid price by a small amount, the implications of the examples presented here should hold nonetheless (i.e., even without accounting for the bid/ask spreads). On those occasions when the bid/ask spread contributes significantly to the concept under discussion, that spread will be accounted for.

To conserve space, some quotations show the entire bid price followed by a slash and then only the last two or three digits of the ask price.

Factors That Affect the Spread: The spread on currency quotations is influenced by the following factors:

Spread f (Order costs, Inventory costs, Competition, Volume, Currency risk)

- Order costs. Order costs are the costs of processing orders; these costs include clearing costs and the costs of recording transactions.
- Inventory costs. Inventory costs are the costs of maintaining an inventory of a particular currency. Holding an inventory involves an opportunity cost because the funds could have been used for some other purpose. If interest rates are relatively high, then the

opportunity cost of holding an inventory should be relatively high. The higher the inventory costs, the larger the spread that will be established to cover these costs.

- Competition. The more intense the competition, the smaller the spread quoted by intermediaries. Competition is more intense for the more widely traded currencies because there is more business in those currencies. The establishment of trading platforms that allow MNCs to trade directly with each other is a form of competition against foreign exchange dealers, and it has forced dealers to reduce their spread in order to remain competitive.
- Volume. Currencies that are more liquid are less likely to experience a sudden change in price. Currencies that have a large trading volume are more liquid because there are numerous buyers and sellers at any given time. This means that the market has enough depth that a few large transactions are unlikely to cause the currency's price to change abruptly.
- Currency risk. Some currencies exhibit more volatility than others because of economic or political conditions that cause the demand for and supply of the currency to change abruptly. For example, currencies in countries that have frequent political crises are subject to sudden price movements. Intermediaries that are willing to buy or sell these currencies could incur large losses due to such changes in their value.

Like the prices of securities in many financial markets, foreign exchange prices can be subject to manipulation. In particular, a few financial institutions that serve as the main intermediaries for large foreign exchange transactions might engage in collusion by agreeing to set wider bid/ask spreads than would normally be possible if they set their quotes competitively.

In the United States, agencies such as the Justice Department, the Federal Bureau of Investigation, and the Federal Reserve attempt to ensure orderly and fair pricing in the foreign exchange market. The oversight of exchange rate pricing is challenging, however, because it can be difficult to prove that financial institutions have conspired to widen spreads.

Foreign Exchange Quotations

Exchange rate quotations for widely traded currencies, and even for many currencies that are not widely traded, are readily available on the Internet. They can be found at financial websites, at the websites of newspapers such as the Wall Street Journal, at the websites of foreign exchange dealers, and even by simply typing "euro-dollar exchange rate" or whatever exchange rate is wanted into a web browser. The rates are frequently updated as the exchange rates change throughout the day. At any moment in time, the exchange rate between two currencies should be similar across the various banks that provide foreign exchange services. If there is a large discrepancy, then customers (or other banks) could profit from purchasing a large amount of the currency from the low-quoting bank and immediately selling it to the high quoting bank. These actions would cause the low-quoting bank to quickly experience a shortage of that currency, while the high-quoting bank would quickly experience an excessive amount of that currency because it was willing to pay too much for the currency. As a result, the banks would rapidly adjust their exchange rate quotations, eliminating any discrepancy between the quotations.

Direct versus Indirect Quotations at One Point in Time: The quotations of exchange rates for currencies normally reflect the ask prices for large transactions. Quotations that report the value of a foreign currency in dollars (number of dollars per unit of other currency) are referred to as direct quotations, whereas quotations that report the number of units of a foreign currency per dollar are known as indirect quotations. If you type, "euro-dollar exchange rate" into your web browser, the result will be 1 euro= x dollars, which is a direct quotation; if you search for "dollar-euro exchange rate," the result will be 1 dollar = x euros, which is an indirect quotation. Websites that provide exchange rates allow you to readily switch between direct and indirect quotations. An indirect quotation is the reciprocal (inverse) of the corresponding direct quotation.

Direct versus Indirect Exchange Rates over Time: Table 2 compares the direct and indirect exchange rates at two different times. Columns 2 and 3 provide quotes at the beginning of a particular period,

while columns 4 and 5 provide quotes at the end of the period. For each currency, the indirect quotes at the beginning and end of the period (columns 3 and 5) are the reciprocals of their respective direct quotes at the beginning and end of the period (columns 2 and 4).

Table 2: Direct and indirect exchange rate quotation

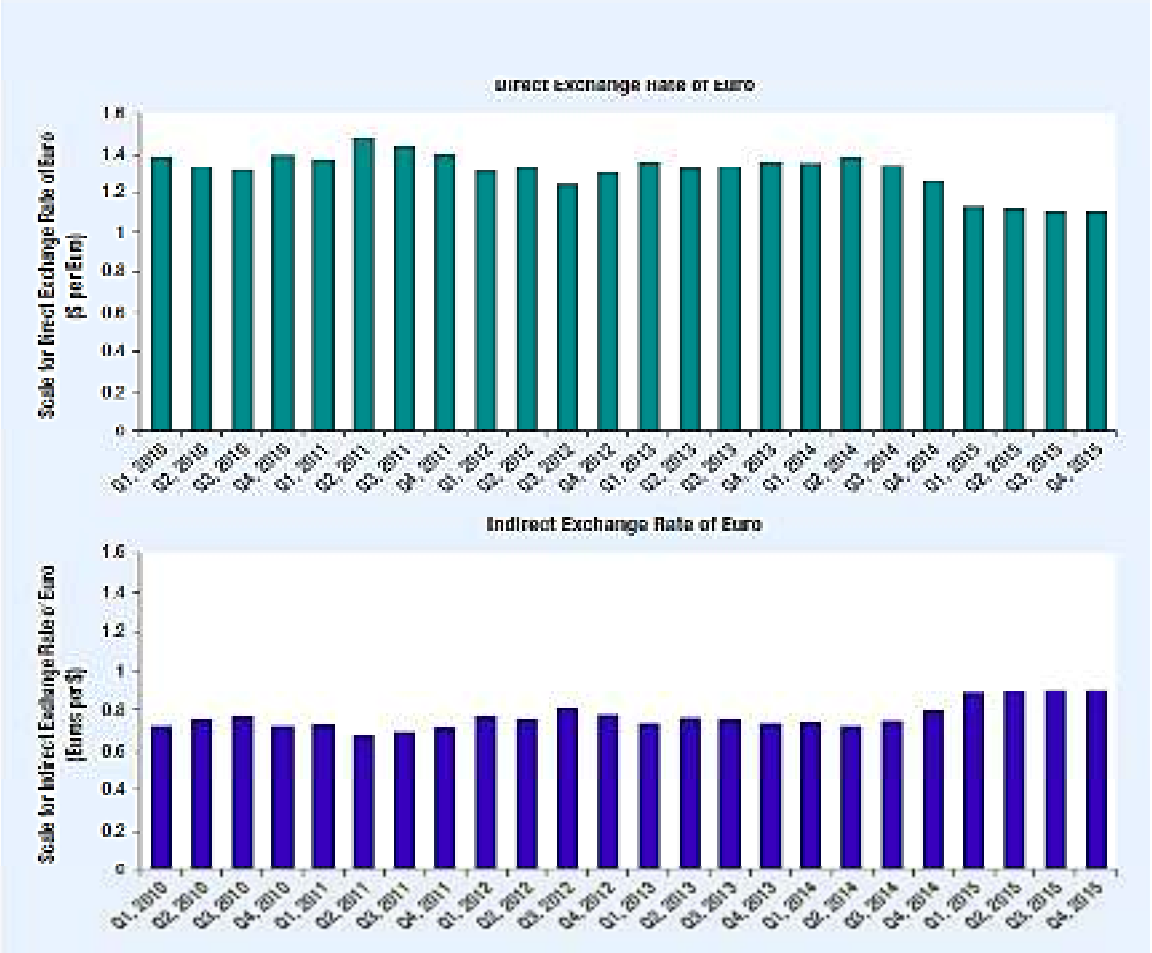
(1) CURRENCY	(2) DIRECT QUOTATION (dollars per unit) AT START OF PERIOD	(3) INDIRECT QUOTATION (units per dollar) AT START OF PERIOD	(4) DIRECT QUOTATION AT END OF PERIOD	(5) INDIRECT QUOTATION AT END OF PERIOD
Canadian dollar	$.68	1.51	$.70	1.43
Euro	$1.081	.97	$1.054	.54
Japanese yen	$.009	111.11	$.010	100.00
Mexican peso	$.12	8.33	$.11	9.09
Swiss franc	$.62	1.61	$.67	1.49
U.K. pound	$1.50	.67	$1.80	.62

Table 2 demonstrates that, for any currency at any time, the indirect exchange rate is the inverse of the direct exchange rate. Table 1 also shows the relationship, for each currency, between movements in the direct exchange rate and movements in the indirect exchange rate.

From the relationship just described between the direct and indirect exchange rates, it follows that, if a currency's direct exchange rate is rising over time, then its indirect exchange rate must be declining over time (and vice versa). The trend for the euro's exchange rate is shown in Exhibit 3.3. Two graphs are shown to compare movements in the direct exchange rate and indirect exchange rate of the currency. The direct exchange rate of the euro is displayed in the top graph, while the indirect exchange rate of the euro is displayed in the lower graph. In some periods (such as from June 2010 to June 2011, the direct exchange rate of the euro increased to reflect the euro's appreciation against the dollar. In such periods the indirect exchange rate of the euro declines, which represents a decrease over time in the amount of euros that equal $1. As the euro's spot rate rises, fewer euros are needed to purchase a dollar. In other periods, such as from April 2014 to November 2015, the direct exchange rate of the euro decreased to reflect depreciation of the euro against the dollar. In such periods the indirect exchange rate of the euro increases, which represents an increase over time in the amount of euros that equal $1. As the value of the euro weakens, more euros are needed to purchase a dollar.

It is important to recognize the difference between direct and indirect exchange rates over time because both types are used in the presentations by different analysts and firms. When a discussion about depreciation of a currency is illustrated with a rising trend for that currency, the trend must be based on an indirect exchange rate.

Figure 1: Relationship over Time between the Euro's Direct and Indirect Exchange Rates



Source of Exchange Rate Quotations Updated currency quotations are provided for several major currencies on Yahoo!'s website (finance.yahoo.com/currency-converter).

You can select any currency for which you want an exchange rate quotation, and you can view a trend of the historical exchange rate movements for any currency. Trends are available for various periods, including 1 day, 5 days, 1 month, 3 months, 6 months, 1 year, and 5 years. As you review a trend of exchange rates, note carefully whether the exchange rate quotation is direct (value in dollars) or indirect (number of foreign currency units per dollar) so that you can properly interpret the trend. The trend indicates not only the exchange rate's direction but also the extent to which the currency has changed over time. The trend also indicates the range of exchange rates observed within a particular period. When a currency's exchange rate is extremely sensitive to economic conditions, its movements mark out a wider range.

Exchange rate quotations are also provided by many other online sources, including www.oanda.com. Most sources provide both direct and indirect exchange rate quotations, so be sure to check which type of quotation is being provided.

Cross Exchange Rates Most tables of exchange rate quotations express currencies relative to the U.S. dollar, but in some instances, a firm will be concerned about the exchange rate between two non-dollar currencies. For example, suppose that a U.S. firm that trades with both Canada and Mexico has a large supply of Canadian dollars, but now it needs Mexican pesos to buy Mexican goods. The firm wants to use its Canadian dollars to obtain the pesos, so it needs to know the Mexican peso value relative to the Canadian dollar. The type of rate desired here is known as a cross exchange rate because it reflects the amount of one foreign currency per unit of another foreign currency. Cross exchange rates can be easily determined with the use of foreign exchange quotations. The relative value of any two non-dollar currencies is equal to the dollar value of one currency divided by the dollar value of the other.

Cross Exchange Rates over Time As the exchange rates of two currencies change against the U.S. dollar over time, the cross exchange rate of these currencies can change as well.

Source of Cross Exchange Rate Quotations Some cross exchange rates are provided online at most websites that provide exchange rate quotations including Yahoo!'s website (finance.yahoo.com/currency-converter), where you can also view the recent trend of a particular cross exchange rate for periods such as 1 day, 5 days, 1 month, 3 months, or 1 year. The trend indicates the volatility of a cross exchange rate over a particular period. Two non-dollar currencies may exhibit high volatility against the U.S. dollar, but if their movements are strongly correlated, then their cross exchange rate should be relatively stable over time. For example, the values of the euro and the British pound typically move in the same direction against the dollar and, over time, also to a similar extent. For this reason, the cross exchange rate between the euro and British pound has been fairly stable.

3.2 Interpreting Foreign Exchange Quotations

Interpreting foreign exchange quotations means understanding how to read and calculate currency exchange rates. Currency exchange rates are the prices of one currency in terms of another currency.

 For example, the exchange rate of the euro (EUR) to the U.S. dollar (USD) is the number of dollars needed to buy one euro.

Foreign exchange quotations are used to express the exchange rate between two currencies. These quotations are essential for international trade and investment, as they allow businesses and investors to buy and sell foreign currencies. Understanding how to interpret foreign exchange quotations is crucial for anyone involved in international trade or investment. There are two types of exchange rate quotations: direct and indirect.

In a direct quotation, the domestic currency is the base currency and the foreign currency is the quoted currency. For example, if the exchange rate between the US dollar and the Euro is 1.2, it means that one US dollar is worth 1.2 Euros. The US dollar is the base currency, and the Euro is the quoted currency. In contrast, in an indirect quotation, the foreign currency is the base currency and the domestic currency is the quoted currency. For example, if the exchange rate between the Euro and the US dollar is 0.83, it means that one Euro is worth 0.83 US dollars. In this case, the Euro is the base currency, and the US dollar is the quoted currency. Foreign exchange quotations are typically expressed as a bid-ask spread.

The bid price is the price at which the market maker is willing to buy the base currency, while the ask price is the price at which the market maker is willing to sell the base currency. The difference between the bid and ask prices is known as the bid-ask spread.

The bid-ask spread can vary depending on the liquidity of the currency pair and the level of competition between market makers. For example, if the exchange rate for USD/EUR is 1.2/1.3, it means that the market maker is willing to buy US dollars at 1.2 Euros and sell them at 1.3 Euros. The bid-ask spread in this case is 0.1 Euros. The bid-ask spread is an important factor to consider when trading foreign currencies, as it represents the cost of the trade.

The wider the bid-ask spread, the more expensive it is to trade the currency pair. It is important to note that exchange rates are constantly fluctuating due to various economic and geopolitical factors. Some of the factors that can affect exchange rates include interest rates, inflation, government policy, and economic indicators. Traders can profit from these fluctuations by buying and selling currencies at the right time. However, it is important to understand the risks involved in foreign exchange trading and to use appropriate risk management strategies. One risk management strategy that traders use is stop-loss orders.

A stop-loss order is an order to sell a currency pair when it reaches a certain price. This can help to limit the trader's losses if the market moves against them. Another risk management strategy is position sizing. Position sizing is the process of determining the appropriate size of a trade based on the trader's account size and risk tolerance. By using appropriate position sizing, traders can limit their risk exposure and avoid large losses. Foreign exchange quotations can also be used to calculate the value of international transactions.

For example, if a US company imports goods from Japan and has to pay in Japanese yen, they can use the exchange rate between USD/JPY to calculate the value of the transaction in US dollars. If the exchange rate is 110, it means that one US dollar is worth 110 Japanese yen.

If the company imports goods worth 100,000 Japanese yen, the value of the transaction in US dollars would be approximately $909.09 (100,000 / 110). In conclusion, interpreting foreign exchange quotations is crucial for individuals and companies involved in international transactions.

It is important to understand the difference between direct and indirect quotations, as well as the impact of bid-ask spreads and economic and political factors on currency values. By staying informed and following market developments, traders and investors can make informed decisions about their investments and manage their risk effectively.

Summary

1. When MNCs and individuals engage in international transactions, they commonly need to exchange their local currency for a foreign currency, or exchange a foreign currency for their local currency. The foreign exchange market allows for the exchange of one currency for another.
2. When World War I began in 1914, the gold standard was suspended. Some countries reverted to the gold standard in the 1920s but abandoned it as a result of the U.S. and European banking panic during the Great Depression. In the 1930s, some countries attempted to peg their currency to the dollar or the British pound, but there were frequent revisions. As a result of instability in the foreign exchange market and the severe restrictions on international transactions during this period, the volume of international trade declined.
3. The foreign exchange market should not be thought of as a specific building or location where traders exchange currencies. Companies normally exchange one currency for another through a commercial bank over a telecommunications network; this is an over the-counter market through which many transactions occur. The largest foreign exchange trading centers are in London, New York, and Tokyo, but foreign exchange transactions occur on a daily basis in cities around the world.
4. Quotations that report the value of a foreign currency in dollars (number of dollars per unit of other currency) are referred to as direct quotations, whereas quotations that report the number of units of a foreign currency per dollar are known as indirect quotations.
5. Order costs are the costs of processing orders; these costs include clearing costs and the costs of recording transactions.
6. Inventory costs are the costs of maintaining an inventory of a particular currency. Holding an inventory involves an opportunity cost because the funds could have been used for some other purpose. If interest rates are relatively high, then the opportunity cost of holding an inventory should be relatively high. The higher the inventory costs, the larger the spread that will be established to cover these costs.

Keywords

- Gold standard system
- Closed economy
- Bretton woods system
- Floating exchange rate
- Bid price
- Exchange rate

- Direct and indirect quotations

Self Assessment

1. Each country's currency was convertible into gold at a specified rate during
A. Glod standard system
B. Closed economy
C. Trade
D. None of the above

2. Which type of exchange rate was followed in gold standard system?
A. Fixed exchange rate
B. Floating exchange rate
C. Managed floating exchange rate
D. None of the above

3. US dollar was overvalued in
A. 1971
B. 1966
C. 1964
D. 1965

4. Which system was suspended during world war I?
A. Floating exchange rate system
B. Gold standard system
C. Flexible exchange rate system
D. None of the above

5. Exchange rate is determined through the forces of demand and supply under
A. Fixed exchange rate
B. Flexible exchange rate
C. Managed floating exchange rate
D. None of the above

6. Foreign exchange dealers include
A. Citigroup
B. JPMorgan Chase
C. Co., Barclays
D. All of the above

7. What is interbank market?
a. Purchase of currency by one bank from another bank
A. Sale of assets
B. Purchase of assets
C. None of the above

8. Which of the following characteristics of the banks are important for the customers?
A. Competitiveness of quote
B. Special relationship with the bank
C. Speed of execution
D. All of the above

9. Cost of processing orders is known as
A. Management cost
B. Order cost
C. Managerial cost
D. None of the above

10. Which of the following factors can effect the spread on currency quotations
A. Order costs
B. Inventory costs
C. Competition
D. All of the above

11. If interest rates are relatively high, then the opportunity cost of holding an inventory
A. Should be relatively high
B. Should be less
C. Will not be effected
D. None of the above

12. The bid price is the price at which the market maker is willing to buy the base currency.
A. True
B. False

13. Currencies that are more liquid are less likely to experience a sudden change in price.
A. True
B. False

14. In direct quotation
A. domestic currency is the base currency
B. foreign currency is the quoted currency
C. both a and b
D. none of the above

15. The more buyers and sellers there are for a currency, the more liquid the market for that currency is.
A. True
B. False

Answers for Self Assessment

1.	A	2.	B	3.	A	4.	B	5.	B
6.	D	7.	A	8.	D	9.	B	10.	D
11.	A	12.	A	13.	A	14.	C	15.	A

Review Questions

1. Critically examine the international financial market.
2. Write a detailed note on gold standard system.
3. Critically examine the history of foreign exchange market.
4. Write a detailed note on foreign exchange quotations.
5. Write a detailed note on interpretation of foreign exchange quotations.

Further Reading

1. International Financial Management By Cheol S Eun And Bruce G Resnick, M.G. Hills
2. International Finance Management By Jeff Madura, Cengage Learning

Unit 04: International Money Market

CONTENTS

Objectives

- Learn about international money market
- Learn about origin of money market
- Learn about banks regulations

Introduction

Each country has a money market whereby surplus units (individuals or institutions with available short-term funds) can transfer funds to deficit units (institutions or individuals in need of funds). Financial institutions such as commercial banks accept short-term deposits from surplus units and redirect the funds toward deficit units. The international money market developed to accommodate the needs of MNCs.

First, many MNCs borrow short-term funds in different currencies to pay for imports denominated in those currencies. Second, MNCs that need funds to support local operations may consider borrowing in a nonlocal currency that exhibits lower interest rates. This strategy is especially appropriate for firms expecting future receivables denominated in that currency. Third, MNCs may consider borrowing in a currency that they anticipate will depreciate against their home currency, as this would enable them to repay the short-term loan at a more favourable exchange rate. In this case, the actual cost of borrowing would be less than the interest rate quoted for that currency. At the same time, some MNCs and institutional investors have incentives to invest short term funds in a foreign currency. First, the interest rate on a short-term investment denominated in a foreign currency might exceed the interest rate on a short-term investment denominated in their home currency. Second, they may consider investing in a currency that they expect will appreciate against their home currency so that the return on their investment would be greater than the interest rate quoted for the foreign investment. Financial institutions such as commercial banks serve this market by accepting deposits and providing loans in various currencies. These intermediaries typically also serve as dealers in the foreign exchange market.

European and Asian Money Markets

As MNCs expanded their operations in the 1970s, Europe and Asia emerged as major centers of international financial intermediation to accommodate their needs. Because the U.S. dollar was

widely used even by foreign countries as a medium for international trade, there was a consistent demand for dollars in Europe and elsewhere. To conduct international trade with European countries, corporations in the United States deposited U.S. dollars in European banks. The banks accepted the deposits because they could then lend the dollars to corporate customers based in Europe. These dollar deposits in banks in Europe (and on other continents) are known as Eurodollars (not to be confused with the euro, which is the currency of many European countries today). The growing importance of the Organization of the Petroleum Exporting Countries (OPEC) also contributed to the growth in Eurodollar deposits. Because OPEC generally requires payment for oil in dollars, the OPEC countries began to deposit a portion of their oil revenues in European banks. These dollar-denominated deposits are sometimes referred to as petrodollars.

Like the European money market, the Asian money market originated as a market involving mostly dollar-denominated deposits. This market emerged to accommodate the needs of businesses that were using the U.S. dollar (and some other foreign currencies) as a medium of exchange for international trade. These businesses could not rely on banks in Europe because of the distance and different time zones. Today, the Asian money market is centered in Hong Kong and Singapore, where large banks accept short-term deposits and make loans in various foreign currencies.

 **Notes:** Banks within the Asian money market usually lend to each other when some banks have excess funds and other banks need more funds. The Asian money market is integrated with the European money market in that banks in Asia lend to and borrow from banks in Europe.

4.1 Origin and Development of the International Money Market

The International Money Market (IMM) is a global marketplace where financial instruments such as currencies, interest rates, and other financial derivatives are traded.

It refers to the network of financial institutions, businesses, and governments that participate in the buying and selling of short-term financial instruments, such as treasury bills and commercial paper, across national borders. The development of the international money market is a result of the increasing globalization of trade and finance, as well as the growth of financial markets around the world. The market is decentralized and operates 24/7 across different time zones, with participants located all over the world.

The IMM has become an essential tool for global trade, investment, and risk management, and its development can be traced back to several key events throughout history.

One of the earliest examples of an international money market can be traced back to the Renaissance period when Italian city-states like Venice, Florence, and Genoa were major centers of trade and commerce. These cities were famous for their banking and financial services, and they played a significant role in financing international trade. They also pioneered the use of bills of exchange, which were promissory notes used by merchants to buy and sell goods across borders. However, it was not until the 19th century that the modern international money market started to take shape.

One of the key developments was the establishment of the gold standard, which became the basis for international trade and finance. Under the gold standard, countries agreed to fix the value of their currency to a certain amount of gold, which helped to stabilize exchange rates and reduce currency volatility. After the first world war this system however totally collapsed. During the mid-war period (1919-1939), the UK tried to reintroduce the old system with some modifications but did not last for long. After the second world war, under the UN, the Bretton Woods Agreement of 1944, established a fixed exchange rate system among the major industrialized countries of the world on the basis of the old gold standard model.

Under this system, the value of a currency was fixed in terms of the US dollar, and the US dollar was in turn fixed to gold at a rate of $35 per ounce. This system created a need for a market where central banks could buy and sell US dollars in order to maintain their exchange rates. In the 1950s and 1960s, the international money market began to develop as a result of increased global trade and the growth of multinational corporations. Banks and other financial institutions began to develop specialized services for their international clients, such as currency hedging and short-term financing.

The Eurodollar market, which refers to US dollar deposits held outside of the United States, emerged as a major component of the international money market in the 1960s. The Eurodollar

market provided a way for international businesses and governments to borrow and lend US dollars without being subject to US regulations and restrictions. The 1970s saw significant changes in the international monetary system, as the Bretton Woods system collapsed in 1971 due to the US government's inability to maintain the fixed exchange rate system. This led to a period of floating exchange rates, where the value of a currency was determined by market forces rather than fixed by government decree. This also led to the growth of new financial instruments, such as currency swaps and options, which allowed businesses and governments to manage their currency risk.

In the 1980s and 1990s, the international money market continued to expand as a result of technological advances and financial deregulation. The use of computers and electronic trading platforms allowed for faster and more efficient trading of financial instruments, while financial deregulation in many countries allowed for the creation of new financial products and services. The globalization of finance also led to the growth of offshore financial centers, such as the Cayman Islands and Bermuda, which offered favourable tax and regulatory environments for financial institutions.

Today, the international money market is a complex network of financial institutions, businesses, and governments that spans the globe. It includes a wide range of financial instruments, such as treasury bills, commercial paper, and certificates of deposit, as well as more complex instruments, such as currency swaps, options, and futures. The market is highly interconnected, with changes in one part of the market affecting other parts of the market and the global economy as a whole.

In conclusion, the international money market has its roots in the Bretton Woods Agreement of 1944, but has since developed into a complex network of financial institutions, businesses, and governments that spans the globe. The market has grown in response to increasing globalization and technological advances, and has played a key role in facilitating global trade and finance.

4.2 Money Market Interest Rates Among Currencies

Money market interest rates play a crucial role in the global economy by determining the cost of borrowing and the return on investment. In this context, comparing interest rates across different currencies is important to understand the relative strength of different economies and the dynamics of global financial markets. Money market interest rates are typically short-term rates that reflect the cost of borrowing or lending money for periods ranging from overnight to one year. These rates are set by central banks or other financial institutions that control the money supply and the cost of borrowing in their respective countries. One important factor that affects money market interest rates is inflation. When inflation is high, central banks may raise interest rates to curb spending and reduce the amount of money in circulation. This makes borrowing more expensive and reduces the money supply, which can help to slow down inflation. Conversely, when inflation is low, central banks may lower interest rates to encourage spending and stimulate economic growth. This increases the money supply, which can help to raise inflation since mild inflation is necessary for economic growth.

Another factor that affects money market interest rates is the strength of the economy. When an economy is growing, demand for credit tends to increase, which can lead to higher interest rates. Conversely, when an economy is in recession or experiencing slow growth, demand for credit tends to decrease, which can lead to lower interest rates. When comparing money market interest rates among currencies, it is important to consider several factors.

First, the exchange rate between two currencies can affect the relative value of the interest rate.

 For example, a currency with a high-interest rate may still have a lower return on investment when the exchange rate is unfavorable. Conversely, a currency with a low interest rate may have a higher return on investment when the exchange rate is favourable.

Second, the stability and credibility of the central bank that sets the interest rate can affect the perceived risk of investing in that currency. A central bank with a history of stable and consistent monetary policy may be viewed as more trustworthy, which can help to attract foreign investment and keep interest rates low. Conversely, a central bank with a history of political interference or economic instability may be viewed as more risky, which can lead to higher interest rates.

Third, the level of economic development in a country can affect money market interest rates. Developed economies tend to have lower interest rates because they have greater access to capital markets and are perceived as more stable and less risky. Emerging economies, on the other hand,

may have higher interest rates because they are still developing and have less access to capital markets.

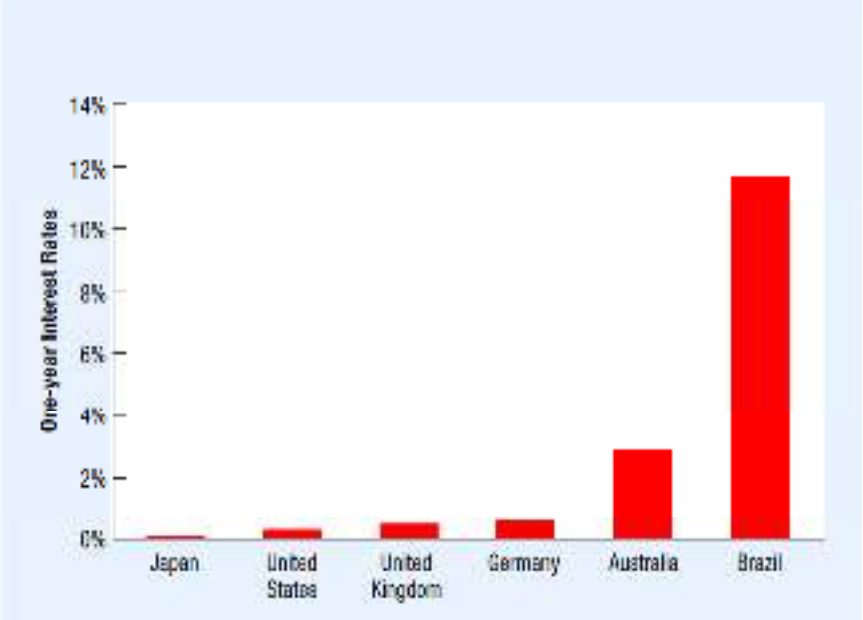
Finally, the global economic environment can also affect money market interest rates among currencies.

For example, during periods of global economic uncertainty or instability, investors may seek safe-haven investments in currencies with low interest rates, such as the US dollar or the Japanese yen. Conversely, during periods of global economic growth, investors may seek higher returns in currencies with higher interest rates, such as the Australian dollar or the New Zealand dollar.

Money market interest rates among currencies are influenced by a variety of factors, including inflation, economic growth, exchange rates, central bank credibility, economic development, and global economic conditions. Understanding these factors is important for investors, businesses, and policymakers who seek to make informed decisions about borrowing, lending, and investing in different currencies. By monitoring money market interest rates and analyzing these factors, it is possible to gain valuable insights into the relative strength of different economies and the dynamics of global financial markets.

The money market interest rate on short-term deposits or short-term loans in a particular currency in international money markets is dependent on the supply of short-term funds provided by surplus units and the demand for short-term funds by deficit units in that currency. In general, a country that experiences both a high demand for and a small supply of short-term funds will have relatively high money market interest rates. Conversely, a country with both a low demand and a large supply of short-term funds will have relatively low money market interest rates. Money market rates tend to be higher in developing countries because they experience higher rates of inflation and faster growth, so more funds are needed (relative to the available supply) to finance that growth. The money market interest rate for a particular currency changes over time in response to changes in the supply and demand for short-term funds for that currency.

Table 1: Comparison of 2016 International Money Market Interest Rates



Quoted money market interest rates for various currencies are displayed in table 1. Notice how the money market rates vary substantially among some currencies. MNCs based in countries whose local currencies exhibit low interest rates tend to have lower financing costs.

A currency's money market is highly influenced by its respective London Interbank Offer Rate (LIBOR), which is the interest rate most often charged for short-term loans between banks in international money markets. The term LIBOR is commonly used even though many international interbank transactions do not pass through London. When a currency's LIBOR rises, money market

rates denominated in that currency tend to rise as well, just as U.S. money market rates tend to move with the federal funds rate (the interest rate charged on loans between U.S. banks).

The LIBOR was historically measured as the average of the rates reported by banks at a particular time. In 2012, country governments detected that some banks were falsely reporting the interest rate they offered in the interbank market in order to manipulate LIBOR and thereby boost the values of their investments that were tied to LIBOR. This scandal prompted financial markets to devise ways of determining the market interest rate in a manner that does not rely on the rates reported by participating banks.

Risk of International Money Market Securities

When MNCs and government agencies issue debt securities with a short-term maturity (one year or less) in the international money market, these instruments are referred to as international money market securities. MNCs typically pay a slightly higher rate than their local government when borrowing in international money markets because of a small risk premium to reflect credit (default) risk. Normally, international money market securities are perceived to be very safe, especially when they are rated high by rating agencies. And because the typical maturity of these securities is one year or less, investors are less concerned about the issuer's financial condition deteriorating by the time of maturity than if the securities had a longer-term maturity. However, some international money market securities have defaulted, so investors in this market need to consider the possible credit (default) risk of the securities that are issued. International money market securities are also exposed to exchange rate risk when the currency denominating the securities differs from the investor's home currency. Specifically, the return on investment in the international money market security will be reduced when currency denominating the money market security weakens against the home currency. This means that, even for securities without credit risk, investors can lose money because of exchange rate risk.

International Credit Market

Multinational corporations and domestic firms sometimes obtain medium-term funds via term loans from local financial institutions or by issuing notes (medium-term debt obligations) in their local markets. However, MNCs also have access to medium-term funds through banks located in foreign markets. Loans of one year or longer that are extended by banks to MNCs or government agencies in Europe are commonly called Euro credits or Euro credit loans, which are transacted in the Euro credit market. These loans can be denominated in dollars or in one of many other currencies, and their typical maturity is five years.

Borrowers usually prefer that loans be denominated in the currency of the country in which they receive most of their cash flows, which eliminates the borrower's exchange rate risk. However, the loan's interest rate depends on the currency in which the loan is denominated. Because banks in money markets accept short-term deposits and sometimes provide longer-term loans, their asset and liability maturities do not match. This misalignment can adversely affect a bank's performance during periods of rising interest rates, as the bank may have locked in a rate on its longer-term loans while the rate it pays on short-term deposits continues to rise. In order to avoid this risk, banks commonly use floating rate loans. The loan rate floats in accordance with the movement of a market interest rate, such as LIBOR.

 For example, a loan that is denominated in a particular currency and is provided by a bank to an MNC might be structured with an interest rate that resets every six months to the prevailing LIBOR for that currency plus 3 percent.

International credit market activity has increased over time, yet the growth is mostly concentrated in regions where economic conditions are relatively strong. Those regions tend to have more funds deposited by MNCs as well as a strong demand for loans by MNCs that are expanding their business. Conversely, lending tends to decline in regions where economic conditions are weak because MNCs are less willing to expand and thus do not borrow additional funds. Banks then are also less willing to grant loans because credit risk is higher in regions where economic conditions are weak.

4.3 Standardized Global Bank Regulations

The global financial crisis of 2008 was a wake-up call for the need for standardized global bank regulations. The crisis exposed the lack of consistent and coordinated regulations across countries and financial institutions, leading to a collapse in the global financial system. In response, policymakers and regulators from around the world came together to create a set of standardized global bank regulations to prevent a similar crisis from happening again. The global financial system is the backbone of the world's economy. It provides an essential mechanism for the transfer of funds between individuals, companies, and governments, enabling them to engage in economic activity, invest, and grow. However, the financial system can be a source of instability, particularly if banks are not adequately regulated. The lack of regulation can lead to risky lending practices, inadequate capitalization, and excessive leverage, which can result in financial crises. Standardized global bank regulations mean the regulations which are to be followed by all the banks in all their economic and financial dealings.

Why are standardized global bank regulations necessary?

1. Firstly, they promote financial stability by ensuring that banks operate within acceptable risk parameters. Banks are required to hold a certain level of capital to protect against unexpected losses, which reduces the likelihood of bank failures and the need for government bailouts.
2. Secondly, standardized global bank regulations protect consumers by ensuring that banks operate in an ethical and professional manner. For example, banks are required to disclose their fees and charges to customers, and they must adhere to strict anti-money laundering and counter-terrorism financing laws.
3. Thirdly, standardized global bank regulations promote fair competition by ensuring that all banks operate under the same rules. This reduces the likelihood of regulatory arbitrage, where banks seek to exploit differences in regulations between jurisdictions to gain a competitive advantage.
4. Fourthly, standardized global bank regulations enhance the credibility of the financial system. The financial system is built on trust, and if banks are not adequately regulated, it can erode public confidence in the system. Standardized global bank regulations help to ensure that the financial system is perceived as trustworthy and credible.
5. Finally, standardized global bank regulations promote international cooperation by providing a common framework for regulation. Banks operate across borders, and therefore, international cooperation is essential to ensure that banks operate within acceptable parameters.

Basel Accords: Standardized global bank regulations are developed through a collaborative process involving various international bodies, governments, and regulators.

The Basel Committee on Banking Supervision (BCBS) is the primary international body responsible for developing standardized global bank regulations. The BCBS was established in 1974 by the central bank governors of the G10 countries to promote sound banking practices and enhance financial stability worldwide. The committee is made up of central bankers and supervisors from 28 jurisdictions and sets global standards for bank regulation, supervision, and risk management. The BCBS develops standardized global bank regulations through a consultative process, which involves input from banks, regulators, and other stakeholders. The regulations are designed to be flexible enough to accommodate different banking systems and business models while ensuring that banks operate within acceptable risk parameters.

The Basel Accords consist mainly of three pillars: minimum capital requirements, supervisory review, and market discipline. The minimum capital requirement ensures that banks have enough capital to absorb losses in times of financial stress. The supervisory review ensures that banks are regularly monitored by regulators to ensure that they are operating within their risk appetite. The market discipline encourages banks to be transparent with their financial information, allowing investors and regulators to make informed decisions.

The most significant standardized global bank regulation developed by the BCBS is the Basel Accords, which consist of three agreements: Basel I, Basel II, and Basel III.

Basel I: Basel I was the first set of Basel Accords developed in 1988, primarily focused on minimum capital requirements. Basel I required banks to maintain a minimum capital adequacy ratio of 8% of their risk-weighted assets. This meant that banks had to have enough capital to cover at least 8% of their loans, investments, and other assets based on their perceived risk.

Basel II: Basel II, introduced in 2004, expanded on the first accord, primarily focused on supervisory review. Basel II introduced three pillars: minimum capital requirements, supervisory review, and market discipline. The supervisory review required banks to conduct their own internal assessments of their risk profiles and develop risk management strategies accordingly. Basel II also introduced a more complex risk-weighting system, allowing for a more nuanced assessment of the risk associated with different assets.

Basel III: Basel III, introduced in 2010, built on the first two Basel Accords, focusing on minimum capital requirements and market discipline. Basel III increased the minimum capital adequacy ratio to 10.5% and introduced new capital requirements for systemically important banks. Basel III also introduced liquidity requirements, ensuring that banks have enough liquid assets to meet short-term obligations. In addition, Basel III required banks to conduct regular stress tests to assess their resilience to financial shocks.

While the Basel Accords are the most well-known and widely adopted global bank regulations, they are not the only ones. In the United States, for example, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 introduced a range of new regulations aimed at improving the stability and transparency of the financial system. These included new rules around derivatives trading, securitization, and credit rating agencies. Other countries have also introduced their own sets of regulations, often based on the Basel framework. However, despite the improvements made by standardized global bank regulations, there are still gaps and weaknesses that need to be addressed. For example, there is a need for more consistent implementation and enforcement of the regulations across different jurisdictions. There is also a need to address new risks and challenges that emerge, such as cyber threats and climate change.

In conclusion, standardized global bank regulations are an essential tool for promoting financial stability, reducing risks, and protecting consumers and investors. The Basel Accords, along with other sets of regulations, provide a framework for banks and financial institutions to operate in a safe and sound manner. While there is still work to be done to improve and strengthen these regulations, they represent an important step forward in the ongoing effort to create a safer and more stable financial system for all.

Summary

1. To conduct international trade with European countries, corporations in the United States deposited U.S. dollars in European banks. The banks accepted the deposits because they could then lend the dollars to corporate customers based in Europe.
2. The International Money Market (IMM) is a global marketplace where financial instruments such as currencies, interest rates, and other financial derivatives are traded. It refers to the network of financial institutions, businesses, and governments that participate in the buying and selling of short-term financial instruments, such as treasury bills and commercial paper, across national borders.
3. The use of computers and electronic trading platforms allowed for faster and more efficient trading of financial instruments, while financial deregulation in many countries allowed for the creation of new financial products and services. The globalization of finance also led to the growth of offshore financial centers, such as the Cayman Islands and Bermuda, which offered favourable tax and regulatory environments for financial institutions.
4. Money market interest rates play a crucial role in the global economy by determining the cost of borrowing and the return on investment. Money market interest rates are typically short-term rates that reflect the cost of borrowing or lending money for periods ranging from

overnight to one year. These rates are set by central banks or other financial institutions that control the money supply and the cost of borrowing in their respective countries.

5. The exchange rate between two currencies can affect the relative value of the interest rate. For example, a currency with a high-interest rate may still have a lower return on investment when the exchange rate is unfavorable.
6. Money market interest rates among currencies are influenced by a variety of factors, including inflation, economic growth, exchange rates, central bank credibility, economic development, and global economic conditions. Understanding these factors is important for investors, businesses, and policymakers who seek to make informed decisions about borrowing, lending, and investing in different currencies. By monitoring money market interest rates and analyzing these factors, it is possible to gain valuable insights into the relative strength of different economies and the dynamics of global financial markets.
7. The global financial crisis of 2008 was a wake-up call for the need for standardized global bank regulations. The crisis exposed the lack of consistent and coordinated regulations across countries and financial institutions, leading to a collapse in the global financial system.

Keywords

- Money market
- Financial stability
- Basel I
- International money market
- Interest rate
- Basel III

Self Assessment

1. Commercial banks

A. Accept deposits
B. Lend money
C. Both a and b
D. None of the above

2. Why international money market developed?

A. Due to globalization
B. Due to trade among countries
C. Closed economy
D. Both a and b

3. The gold standard system was collapsed after

A. World war I
B. 1910
C. 1911
D. 1909

4. Under gold standard system the exchange rate was

A. Fixed
B. Flexible
C. Floating
D. Managed floating

5. Which of the following factors can effect the money market interest rate?
A. Inflation
B. Strength of the economy
C. Demand
D. All of the above

6. The money market interest rate is dependent on
A. Supply of funds
B. Availability of funds
C. Demand for money
D. All of the above

7. Money market interest rate will be high if
A. Demand for funds is more
B. There is shortage of supply of funds
C. Surplus funds are available
D. Both a and b

8. Money market interest rate will decrease if
A. Demand for funds is decreasing
B. There is surplus supply of funds available
C. Shortage of funds
D. Both a and b

9. LIBOR is the interest rate charged for short-term loans between
A. Banks in international money markets
B. People
C. Two persons
D. None of the above

10. LIBOR, or London Interbank Offered Rate, is primarily used for:
A. Regulating stock market transactions
B. Setting global inflation targets
C. Calculating interest rates for international loans
D. Determining exchange rates between major currencies

11. Which of the following is a key characteristic of the international money market?
A. It deals exclusively with long-term loans and investments.

B. Transactions in this market have no impact on exchange rates.
C. Instruments traded in this market have maturities of one year or less.
D. Only government entities are allowed to participate.

12. Why are standardized global bank regulations necessary?
A. Promote financial stability
B. Protect consumers by ensuring that banks operate in an ethical and professional manner
C. Promote fair competition by ensuring that all banks operate under the same rules
D. All of the above

13. Which of the following are pillars of Basel accords?
A. Minimum capital requirements
B. Supervisory review
C. Market discipline
D. All of the above

14. Basel I required banks to maintain a minimum capital adequacy ratio of
A. 8 percent
B. 9 percent
C. 10 percent
D. 11 percent

15. Minimum capital adequacy ratio was increased to 10.5% under
A. Basel III
B. Basel II
C. Basel I
D. None of the above

Answers for Self Assessment

1.	C	2.	D	3.	A	4.	A	5.	D
6.	D	7.	D	8.	D	9.	A	10.	C
11.	C	12.	D	13.	D	14.	A	15.	A

Review Questions

1. Critically examine international money market.
2. Write a detailed note on origin and development of international money market.
3. Why money market interest rate is changing? Explain
4. Critically examine global bank regulations.
5. Why are standardized global bank regulations necessary? Explain

Further Reading

1. International Financial Management By Cheol S Eun And Bruce G Resnick, M.G. Hills
2. International Finance Management By Jeff Madura, Cengage Learning

Unit 05: International Stock Market

CONTENTS

Objectives

- Learn about stocks
- Discuss about issuance of stock in foreign markets
- Learn about issuance of foreign stock in India

Introduction

Just as some MNCs issue stock outside their home country, many investors purchase stocks outside their home country. There are several reasons for such a strategy. First, these investors may expect favourable economic conditions in a particular country and therefore invest in stocks of the firms in that country. Second, investors may wish to acquire stocks denominated in currencies that they expect to strengthen over time, because that would enhance the return on their investment. Third, some investors invest in stocks of other countries as a means of diversifying their portfolio. Thus their investment is less sensitive to possible adverse stock market conditions in their home country.

5.1 Issuance of Stock in Foreign Markets

MNCs may issue stock in foreign markets for various reasons. MNCs may more readily attract funds from foreign investors by issuing stock in international markets. They have their stock listed on an exchange in any country where they issue shares, because investors in a foreign country are only willing to purchase stock if they can later easily sell their holdings locally in the secondary market. The stock is denominated in the currency of the country where it is placed. An MNC's stock offering may be more easily digested when it is issued in several markets. The stocks of some U.S.-based MNCs are widely traded on numerous stock exchanges around the world, which gives non-U.S. investors easy access to those stocks and also gives the MNCs global name recognition. Many MNCs issue stock in a country where they will generate enough future cash flows to cover dividend payments.

 For example Dow Chemical Co., a large U.S.-based MNC, does much business in Japan. It has supported its operations in Japan by issuing stock to investors there, which is denominated in Japanese yen. Thus Dow can use the yen proceeds to finance its expansion in Japan, and does not need to convert dollars to yen. In order to ensure that Japanese investors can easily sell the stock that they purchase, Dow Chemical Co. lists its stock on the Tokyo exchange. Because the stock

listed on the Tokyo exchange is denominated in Japanese yen, Japanese investors who are buying or selling this stock need not convert to or from dollars. If Dow plans to expand its business in Japan, it may consider a secondary offering of stock in Japan. Because its stock is already listed there, it may be easy for Dow to place additional shares in that market and thereby raise equity funding for its expansion.

Benefits of Issuing Stock in Foreign Markets

1. Access to a Larger Pool of Capital: Cross-border listing provides access to a much larger pool of investors and capital than domestic markets. This can be particularly attractive to companies seeking to raise large amounts of capital to fund growth and expansion initiatives.
2. Increased Visibility: Listing on foreign exchanges can enhance a company's visibility and reputation. It can also increase brand recognition and help establish the company's presence in new markets.
3. Diversification of Investor Base: Issuing stock in foreign markets can help diversify a company's investor base, reducing its reliance on any one market or investor group. This can help mitigate risk and provide a more stable source of capital.
4. Improved Liquidity: Listing on foreign exchange can help increase the liquidity of a company's shares. This can provide investors with more opportunities to buy and sell shares and may result in a higher valuation for the company.

Challenges of Issuing Stock in Foreign Markets

1. **Regulatory Hurdles:** Listing on a foreign exchange requires compliance with the rules and regulations of the host country. This can be a complex process that requires significant time and resources to navigate.
2. **Legal and Accounting Issues:** Companies may need to comply with different legal and accounting standards when listing on a foreign exchange. This can be a complex and costly process, requiring the assistance of legal and accounting professionals.
3. **Currency Risk:** Listing on a foreign exchange exposes a company to currency risk, as fluctuations in exchange rates can impact the value of its shares.
4. **Cultural and Language Differences:** Companies may need to navigate cultural and language differences when entering a new market. This can be particularly challenging for companies operating in countries with vastly different business cultures and norms.

There are several ways in which companies can issue stock in foreign markets. The most common method is to list on a foreign stock exchange. This involves meeting the listing requirements of the exchange, such as financial reporting and governance standards, and paying listing fees. Once listed, the company's shares can be traded by investors located in that country or region. Another option is to issue American Depositary Receipts (ADRs). ADRs are certificates issued by a US bank that represent a certain number of shares in a foreign company. These certificates can be traded on US stock exchanges, making it easier for US investors to invest in foreign companies. A third option is to issue Global Depositary Receipts (GDRs). GDRs are similar to ADRs, but they can be traded on multiple stock exchanges around the world. This can make it easier for companies to access a broader pool of investors and raise more capital.

The Process of Issuing Stock in Foreign Markets

1. **Conduct a Feasibility Study:** Before deciding to list on foreign exchange, companies should conduct a feasibility study to assess the potential benefits and challenges of the listing.

2. **Choose a Market:** Companies should select a foreign market that is compatible with their business strategy and goals. Factors to consider include the size of the market, the regulatory environment, and the potential investor base.
3. **Choose an Advisor**: Companies should select an advisor to assist with the listing process. Advisors can provide guidance on the regulatory and legal requirements of the host country and can help navigate cultural and language differences.
4. **Prepare the Offering:** Companies should prepare the offering materials, including the prospectus and financial statements, in compliance with the regulations of the host country.
5. **Submit the Application:** Companies must submit an application to the exchange in the host country. The application must include all relevant documents and comply with the exchange's listing requirements.
6. **Due Diligence:** The exchange will conduct due diligence on the company, including a review of its financial statements, legal and regulatory compliance, and corporate governance.
7. **Listing Approval:** If the exchange approves the listing, the company can proceed with the issuance of its shares on the foreign exchange.

 **Notes:** Issuing stock in foreign markets can be a beneficial strategy for companies seeking to raise capital and expand their investor base. However, the process of cross-border listing can be complex and challenging, requiring careful consideration of the benefits and challenges, and significant time and resources to navigate. Companies should work with experienced advisors and conduct thorough due diligence to ensure a successful and compliant listing.

Issuance of Foreign Stock in the United States

Non-U.S. corporations that need large amounts of funds sometimes issue stock in the United States (these are called Yankee stock offerings) because the U.S. new-issues market is so liquid. Because many financial institutions in the United States purchase non-U.S. stocks as investments, non-U.S. firms may be able to place an entire stock offering in the United States. By issuing stock in the United States, non-U.S. firms may diversify their shareholder base; this can lessen the share price volatility induced by large investors selling shares. Investment banks and other financial institutions in the United States often serve as underwriters of stock targeted for the U.S. market, and they receive underwriting fees of about 7 percent of the issued stock's value. Many of the recent stock offerings in the United States by non-U.S. firms have resulted from privatization programs in Latin America and Europe. That is, businesses that were previously government owned are being sold to U.S. shareholders. Given the large size of some of these businesses, their local stock markets are not large enough to digest the stock offerings. Consequently, U.S. investors are financing many privatized businesses based in foreign countries.

Non-U.S. firms that issue stock in the United States have their shares listed on a U.S. stock exchange, so that the shares placed in the United States can be easily traded in the secondary market. Firms that issue stock in the United States are normally required to satisfy stringent disclosure rules regarding their financial condition. However, they are exempt from some of these rules when they qualify for a Securities and Exchange Commission guideline (called Rule 144a) through a direct placement of stock to institutional investors.

Effect of the Sarbanes-Oxley Act on Foreign Stock Listings

In 2002 the U.S. Congress passed the Sarbanes-Oxley Act, which required firms whose stock is listed on U.S. stock exchanges to provide more complete financial disclosure. However, the high cost of compliance caused many non-U.S. firms to place new issues of their stock in the United Kingdom, rather than the United States. Furthermore, some non-U.S. firms listed on U.S. stock exchanges before the Sarbanes-Oxley Act de-registered after its passage; such withdrawals may be attributed to the high cost of compliance.

American Depository Receipts: Non-U.S. firms also obtain equity financing by issuing American depository receipts (ADRs), which are certificates representing bundles of the firm's stock. The use of ADRs circumvents some disclosure requirements imposed on stock offerings in the United States while enabling non-U.S. firms to tap the U.S. market for funds. Examples include Cemex (ticker symbol CX, based in Mexico), China Telecom Corp. (CHA, China), Nokia (NOK, Finland),

Heineken (HINKF, Netherlands), Alibaba (BABA, China), and Credit Suisse Group (CS, Switzerland). Because ADR shares can be traded just like shares of a stock, the price of an ADR changes each day in response to demand and supply conditions. Over time, however, the value of an ADR should move in tandem with the value of the corresponding stock that is listed on the foreign stock exchange (after exchange rate effects are taken into account). The formula for calculating the price of an ADR is

$P_{ADR} = P_{FS} \times S$

Here P_{ADR} denotes the price of the ADR, P_{FS} is the price of the foreign stock measured in foreign currency, and S is the spot rate of the foreign currency. Holding the price of the foreign stock constant, the ADR price should move proportionately (against the dollar) with movement in the currency denominating the foreign stock. American depository receipts are especially attractive to U.S. investors who anticipate that the foreign stock will perform well and that the currency in which it is denominated will appreciate against the dollar.

For example A share of the ADR of the French firm Pari represents one share of this firm's stock that is traded on a French stock exchange. The share price of Pari was 20 euros when the French market closed. As the U.S. stock market opens, the euro is worth $1.05, so the ADR price can be calculated as

$P_{ADR} = P_{FS} \times S$

$= 20 \times \$1{:}05$

$= \$21$

If there is a difference between the ADR price and the price of the foreign stock (after adjusting for the exchange rate), then investors can use arbitrage to capitalize on this discrepancy. Over time, arbitrage will realign the prices.

 For example Continuing with the previous example, assume that there are no transaction costs. If $P_{ADR} < (P_{FS} \times S)$, then ADR shares will flow back to France; they will be converted to shares of the French stock and then traded in the French market. Investors can engage in arbitrage by buying the ADR shares in the United States, converting them to shares of French stock, and then selling those shares on the French stock exchange where the stock is listed. The arbitrage will (1) reduce the supply of ADRs traded in the U.S. market, putting upward pressure on the ADR price, and (2) increase the supply of the French shares traded in the French market, putting downward pressure on the stock price in France. The arbitrage will continue until the discrepancy in prices disappears.

In reality, there are some transaction costs associated with converting ADRs to foreign shares. This means that arbitrage will occur only if the potential arbitrage profit exceeds the transaction costs. ADR price quotations are provided by various websites, such as www.adr.com.

Comparing the Size among Stock Markets

Table 1 provides a summary of the major stock markets, although there are numerous other exchanges. Some foreign stock markets are much smaller than the U.S. markets because their firms have traditionally relied more on debt financing than on equity financing. However, recent trends indicate that firms outside the United States now issue stock more frequently, which has led to the growth of non-U.S. stock markets. The percentage of individual versus institutional ownership of shares varies across stock markets. Outside the United States, financial institutions (and other firms) own a large proportion of the shares, whereas individual investors own a relatively small proportion.

In 2000, the stock exchanges of Amsterdam, Brussels, and Paris merged to create the Euronext market; since then, the Lisbon stock exchange has also joined. In 2007, the NYSE joined Euronext to create NYSE Euronext, which represented a major step toward creating a global stock exchange. In 2012, Intercontinental Exchange (ICE) acquired NYSE Euronext. Both the NYSE and Euronext now operate as divisions of ICE. Most of the largest firms based in Europe have listed their stock on the Euronext market.

In recent years, many new stock markets have been developed. Such emerging markets allow foreign firms to raise large amounts of capital by issuing stock. These markets should enable U.S.

firms doing business in developing countries to raise funds by issuing stock there and listing their stock on the local stock exchanges.

Table 1: comparison of stock exchanges

COUNTRY	MARKET CAPITALIZATION (billions of dollars)	NUMBER OF LISTED COMPANIES
Argentina	60	101
Australia	1,622	2,071
Brazil	823	308
Chile	225	308
China	6,270	2,635
Greece	77	244
Hong Kong	3,324	1,763
Hungary	13	48
Japan	4,485	3,470
Mexico	460	147
Norway	219	220
Slovenia	6	77
Spain	942	3,460
Switzerland	1,515	275
Taiwan	860	882
United Kingdom	6,187	2,939
United States	19,222	5,250

Source: World Federation of Exchanges.

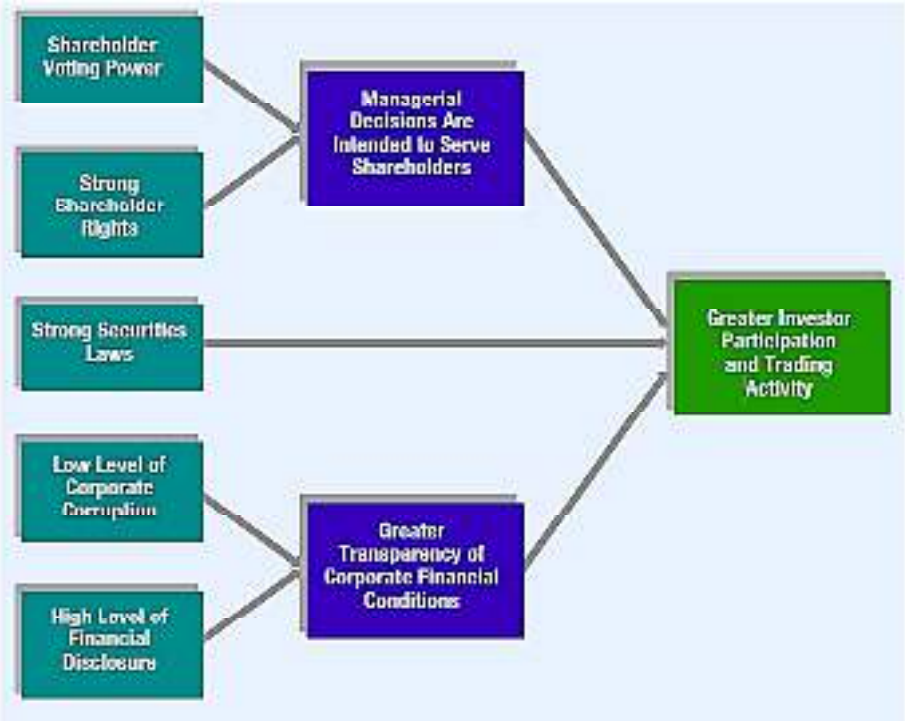
How Governance Varies among Stock Markets?

In general, stock market participation and trading activity are higher in countries where there is strong governance. Figure 1 identifies some factors that enable stronger governance and thus may increase the trading activity in a stock market. These factors are discussed next.

1. Rights Shareholders in some countries have more rights than those in other countries. For example, shareholders have more voting power in some countries than others, and they can have influence on a wider variety of management issues in some countries.
2. Legal Protection: Shareholders in some countries may have more power to sue publicly traded firms if their executives or directors commit financial fraud. In general, common-law countries such as Canada, the United Kingdom, and the United States allow for more legal protection than civil-law countries such as France and Italy. Managers are more likely to serve shareholder interests when shareholders have more legal protection.
3. Government Enforcement: A country might have laws to protect shareholders yet not adequately enforce those laws, which means that shareholders are not protected. Some countries tend to have less corporate corruption than others. In these countries, shareholders are less susceptible to major losses due to agency problems whereby managers use shareholder money for their own benefit.
4. Accounting Laws: Beginning in 2001, the International Accounting Standards Board issued accounting rules for public companies. Many countries now require public companies to use these rules in preparing their financial statements. As a result, there is more uniformity in accounting rules across countries, but there are still some differences

that might make it difficult to directly compare financial statements of MNCs across countries. Shareholders are less susceptible to losses stemming from insufficient information when more transparency is required of public companies in their financial reporting.

Figure 1: Impact of Governance on Stock Market Participation and Trading Activity



Impact of Governance Characteristics In general, stock markets that allow more voting rights for shareholders, more legal protection, more enforcement of the laws, and more stringent accounting requirements attract more investors who are willing to invest in stocks. This allows for more confidence in the stock market and greater pricing efficiency, because there is a large set of investors who monitor each firm. A stock market that does not attract investors will not attract companies in search of funds; in this case, companies must rely either on stock markets in other countries or on credit markets (bonds and bank loans).

Integration of International Stock Markets and Credit Markets

Because the economies of countries are integrated and because stock market prices reflect the host country's prevailing and anticipated economic conditions, stock market prices are integrated across countries. Furthermore, international credit and stock markets are integrated because they are both adversely affected when conditions cause the perceived credit risk of companies to increase. When economic conditions become unfavourable, there is more uncertainty surrounding the future cash flows of firms; hence the risk premium required by investors rises and valuations of debt securities and stocks fall.

5.2 Issuance of Foreign Stock in India

India has become one of the most attractive destinations for foreign investors in recent years due to its growing economy and large population.

Foreign companies seeking to raise capital in India can do so by issuing stock in the Indian market. The process of issuing foreign stock in India is very complex and it is subject to various regulations and requirements imposed by the Securities and Exchange Board of India (SEBI) and the Reserve Bank of India (RBI).

Eligibility Criteria

1. Minimum net worth requirement: The minimum net worth requirement varies depending on the type of foreign company seeking to issue stocks in India. A foreign company that is listed on a recognized stock exchange in its home country must have a minimum net worth of USD 5 million. A foreign company that is not listed on a recognized stock exchange must have a minimum net worth of USD 20 million.
2. Track record of profitability: A foreign company seeking to issue stocks in India must have a track record of making profits for at least three years preceding the year of issuance of shares. Compliance with foreign exchange regulations: Foreign companies must comply with foreign exchange regulations when issuing stocks in India. These regulations include obtaining a no-objection certificate (NOC) from the RBI. They must also comply with Foreign Exchange Management Act (FEMA) and the Foreign Direct Investment (FDI) policy.
3. Approvals Required: Once a foreign company has determined that it is eligible to issue stock in India, it must obtain necessary approvals from the SEBI and RBI. The approvals include an approval for the issuance of securities under the FDI policy, and a no-objection certificate (NOC) from the RBI. The FDI policy allows foreign companies to issue equity shares, convertible debentures, and preference shares in India, subject to certain conditions. These conditions include a limit on the total foreign investment in the company, a restriction on the use of proceeds from the issuance, and a lock-in period for the shares issued. The NOC from the RBI is required to ensure compliance with foreign exchange regulations. The NOC requires the foreign company to provide certain information about the proposed issuance, including the amount of investment, the nature of the investment, and the source of funds.

Types of Issuance

Once the necessary approvals have been obtained, the foreign company can proceed with the issuance of stock in India. The issuance can be made through a public offering or a private placement.

1. Public Offering: In a public offering, the foreign company offers its shares to the public through an initial public offering (IPO) or a follow-on public offering (FPO). The IPO is the first time the company's shares are offered to the public, while the FPO is a subsequent offering made after the company is listed on an Indian stock exchange. To make a public offering, the foreign company must comply with the SEBI's regulations for public offerings, which include the filing of a prospectus, disclosure of certain information about the company, and compliance with pricing guidelines. The prospectus is a legal document that contains information about the company, its business, financial statements, risk factors, and terms of the offering. The prospectus must be filed with the SEBI and the stock exchanges where the shares are proposed to be listed. The disclosure requirements for public offerings are extensive and require the foreign company to provide information about its financials, management, industry trends, and risk factors. The SEBI requires that the disclosure be made in a manner that is clear, concise, and easy to understand for the investor.
2. Private Offering: In a private placement, the foreign company offers its shares to a select group of investors, such as institutional investors or high-net-worth individuals. The private placement can be made through a qualified institutional placement (QIP) or an institutional placement program (IPP). To make a private placement, the foreign company

must comply with the SEBI's regulations for private placements, which include the filing of an information memorandum, disclosure of certain information about the company, and compliance with pricing guidelines.

Regardless of the type of offering, the foreign company must appoint a merchant banker to manage the issuance. The merchant banker is responsible for preparing the offer document, marketing the offering, and ensuring compliance with regulatory requirements. In addition to the regulatory requirements, foreign companies must also consider the tax implications of issuing stock in India. The tax implications include the withholding tax on dividends, the capital gains tax on the sale of shares, and the transfer pricing regulations.

Pricing guidelines for public offerings are also set by the SEBI.

The guidelines require that the issue price be determined based on the fair value of the shares, as determined by an independent valuer.

Advantages of Issuing Foreign Stock in India

1. Access to a large market: India has a large and growing market, which provides foreign companies with access to a new customer base.
2. Diversification of funding sources: Issuing foreign stock in India diversifies the funding sources for foreign companies and reduces their dependence on their home markets.
3. Higher valuation: Foreign companies may receive a higher valuation when they issue stocks in India, due to the country's economic growth and the potential for higher returns.

 **Notes:** The process involves obtaining necessary approvals from the SEBI and RBI, complying with foreign exchange regulations, and complying with the SEBI's regulations for public or private offerings. Foreign companies must also consider the tax implications of issuing stock in India.

Summary

1. MNCs may issue stock in foreign markets for various reasons. MNCs may more readily attract funds from foreign investors by issuing stock in international markets. They have their stock listed on an exchange in any country where they issue shares, because investors in a foreign country are only willing to purchase stock if they can later easily sell their holdings locally in the secondary market.
2. There are several ways in which companies can issue stock in foreign markets. The most common method is to list on a foreign stock exchange. This involves meeting the listing requirements of the exchange, such as financial reporting and governance standards, and paying listing fees. Once listed, the company's shares can be traded by investors located in that country or region.
3. Listing on foreign exchange can help increase the liquidity of a company's shares. This can provide investors with more opportunities to buy and sell shares and may result in a higher valuation for the company.
4. ADRs are certificates issued by a US bank that represent a certain number of shares in a foreign company. These certificates can be traded on US stock exchanges, making it easier for US investors to invest in foreign companies.
5. GDRs are traded on multiple stock exchanges around the world. This can make it easier for companies to access a broader pool of investors and raise more capital.
6. Foreign companies seeking to raise capital in India can do so by issuing stock in the Indian market. The process of issuing foreign stock in India is very complex and it is subject to

various regulations and requirements imposed by the Securities and Exchange Board of India (SEBI) and the Reserve Bank of India (RBI).

7. Once a foreign company has determined that it is eligible to issue stock in India, it must obtain necessary approvals from the SEBI and RBI. The approvals include an approval for the issuance of securities under the FDI policy, and a no-objection certificate (NOC) from the RBI. The FDI policy allows foreign companies to issue equity shares, convertible debentures, and preference shares in India, subject to certain conditions. These conditions include a limit on the total foreign investment in the company, a restriction on the use of proceeds from the issuance, and a lock-in period for the shares issued.

Keywords

- GDR
- ADR
- RBI
- NOC
- Foreign stock
- Listed companies

Self Assessment

1. Why investors purchase stocks outside their home country?

A. Investors may expect favourable economic conditions in a particular country

B. Investors may wish to acquire stocks denominated in currencies that they expect to strengthen over time

C. Investors invest in stocks of other countries as a means of diversifying their portfolio

D. All of the above

2. What are the benefits of issuing stocks in foreign market?

A. Increased visibility

B. Improved liquidity

C. Access to a Larger Pool of Capital

D. All of the above

3. Issuing stock in foreign markets can

A. Reduce its reliance on any one market

B. Reduce its reliance on one investor group

C. Increase it reliance on one market

D. Both a and b

4. Which of the following challenges are faced while issuing stocks in foreign market?

A. Legal and Accounting Issues

B. Currency risk

C. Cultural and language differences

D. All of the above

5. Which of the following can be traded on multiple stock exchanges around the world?
A. GDR
B. Global depository receipt
C. Food
D. Both a and b

6. Why advisor is required?
A. To assist with the listing process
B. Advisors can provide guidance on the regulatory and legal requirements of the host country
C. Advisor can help navigate cultural and language differences.
D. All of the above

7. Why is India successful in attracting foreign investors?
A. Due to growth of the economy
B. Because India is a populated country
C. Both a and b
D. None of the above

8. What is eligible criteria to issue foreign stock in India?
A. A foreign company that is listed on a recognized stock exchange in its home country must have a minimum net worth of USD 5 million.
B. A foreign company that is not listed on a recognized stock exchange must have a minimum net worth of USD 20 million.
C. A foreign company seeking to issue stocks in India must have a track record of making profits for at least three years preceding the year of issuance of shares.
D. All of the above

9. If the company is eligible to issue stocks in India then it needs to take a approval from
A. RBI
B. SEBI
C. Both a and b
D. None of the above

10. The FDI policy allows foreign companies
A. To issue equity shares
B. To issue convertible debentures
C. To issue preference shares in India
D. All of the above

11. In public offerings, foreign company offer its shares to
A. Public
B. One person
C. Two persons
D. Three persons

12. The first time offering of shares to the public is known as

A. IPO

B. FPO

C. Foreign investment

D. Direct investment

13. What are the advantages of issuing foreign stocks in India?

A. Access to large market

B. Higher valuation

C. Diversification of funding sources

D. All of the above

14. The private placement can be made through a

A. Qualified institutional placement

B. Institutional placement program

C. IPP

D. All of the above

15. Pricing guidelines for public offering are set by

A. SEBI

B. FDI

C. FERA

D. None of the above

Answers for Self Assessment

1.	D	2.	D	3.	D	4.	D	5.	A
6.	D	7.	C	8.	D	9.	C	10.	D
11.	A	12.	A	13.	D	14.	D	15.	A

Review Questions

1. What is international stock market? Explain
2. Write a detailed note on benefits of issuing stock in foreign market.
3. Write a detailed note on challenges of issuing stock in foreign market.
4. Critically examine the issuance of foreign stock in India.
5. Write a detailed note on eligible criteria and advantages of issuance of foreign stock in India.

Further Reading

1. International Financial Management By Cheol S Eun And Bruce G Resnick, M.G. Hills

2. International Finance Management By Jeff Madura, Cengage Learning

Unit 06: The Open Economy

CONTENTS

Objectives

After studying this unit the students will be able to

- Describe open economy
- Learn about trade balance
- Discuss about balance of payment
- Discuss about international flow of capital and goods
- Learn about Mundell Flamming model

Introduction

An open economy is an economic system that interacts and engages with other economies around the world through international trade, investment, and financial transactions. In an open economy, there is a significant degree of cross-border exchange of goods, services, capital, and information.

6.1 Introduction to Open Economy

An open economy is an economic system that allows for the free flow of goods, services, and capital across borders. In an open economy, international trade, foreign investment, and cross-border financial transactions are an integral part of the economic system. This is in contrast to a closed economy, which restricts or limits the flow of goods, services, and capital across its borders.

In a closed economy, we have the GDP as

$Y=C+I+G$

But in an open economy, the GDP is,

$Y=C+I+G+(X-M)$

Open economies can have significant advantages in terms of increased economic growth, improved efficiency, and greater competitiveness. However, they also face challenges such as increased exposure to international economic shocks and greater vulnerability to financial crises.

Elements of an Open Economy

1. International trade: In an open economy, countries engage in international trade, importing goods and services that they do not produce themselves, and exporting those that they do. This allows countries to specialize in the production of goods and services in which they have a comparative advantage, leading to increased efficiency and productivity.
2. Foreign investment: Foreign investment involves the ownership or control of assets, including businesses and property, in a foreign country. In an open economy, foreign investment can help spur economic growth by bringing in capital, technology, and expertise. Foreign investors can also benefit from investing in open economies by gaining access to new markets and resources.
3. Cross-border financial transactions: Open economies allow for the free flow of capital across borders. This includes foreign direct investment (FDI), portfolio investment, and international banking. Cross-border financial transactions can help countries finance investments and support economic growth, but they also create risks, such as increased exposure to international economic shocks and financial crises.

Benefits of an Open Economy

1. Increased efficiency and productivity: An open economy enables countries to specialize in the production of goods and services in which they have a comparative advantage. This results in increased efficiency, higher levels of production, and lower costs. Specialization leads to greater economies of scale and more efficient use of resources.
2. Increased competition and innovation: An open economy encourages competition, which drives down prices and improves the quality of goods and services. Competition also incentivizes businesses to innovate and develop new products to meet the demands of consumers.
3. Access to larger markets: An open economy enables countries to access larger markets, leading to increased sales and higher profits. It also allows consumers to access a wider range of goods and services at lower prices, as companies can take advantage of economies of scale to reduce costs.
4. Access to capital: An open economy provides access to foreign capital, which can be used for investment and expansion. This leads to increased economic growth and job creation. Foreign investment can also provide access to new technologies and expertise.
5. Increased economic growth: An open economy fosters economic growth by facilitating the flow of goods, services, and capital. Increased economic growth leads to higher living standards and greater opportunities for citizens. It can also lead to improvements in infrastructure, education, and healthcare.

Challenges of an Open Economy

1. Vulnerability to external shocks: An open economy is vulnerable to external shocks, such as changes in exchange rates, fluctuations in commodity prices, or global economic downturns. These shocks can have a significant impact on the domestic economy and can lead to increased economic volatility.

2. Unequal distribution of benefits: The benefits of an open economy are not evenly distributed among all segments of the population. Some individuals and industries may benefit greatly, while others may suffer losses. For example, the outsourcing of jobs to other countries can lead to job losses and wage stagnation in certain industries.
3. Loss of domestic jobs: Increased competition from foreign producers can lead to the loss of domestic jobs. This is particularly true in industries where domestic producers are less efficient than foreign producers. This can lead to social and economic dislocation, particularly in regions that rely heavily on a particular industry.
4. Threat to national security: An open economy increases the risk of foreign ownership of strategic assets and industries, which can threaten national security. This can lead to concerns about the protection of sensitive technologies and national resources.
5. Increased trade deficits: An open economy can lead to increased trade deficits, as imports may exceed exports. This can result in a loss of foreign reserves and an increase in debt, which can make the economy vulnerable to external shocks.

 **Notes:** An open economy is an economic system that allows for the free flow of goods, services, and capital across borders. Open economies can have significant advantages in terms of increased economic growth, improved efficiency, and greater competitiveness. They also face challenges such as increased exposure to international economic shocks and greater vulnerability to financial crises. Overall, the benefits of an open economy can outweigh the challenges if countries manage the risks effectively and work to ensure that the benefits are shared fairly among all members of society.

6.2 Trade Balance

The trade balance of a country is a measure of the difference between the value of its exports and the value of its imports. It is a crucial indicator of a country's economic health and is closely watched by policymakers, economists, and investors. Trade balance may be surplus/positive or deficit/negative. In the national income equation-

Y=C+I+G+(X-M)

If X=M…… Balanced trade balance

If X>M…… surplus/positive trade balance

If X<M…… deficit/negative trade balance

Significance of Trade Balance:

Trade balance is a crucial indicator of a country's economic health. A positive trade balance indicates that a country is exporting more goods and services than it is importing, which is generally considered to be a sign of economic strength. A positive trade balance can also contribute to a country's economic growth, as the export of goods and services generates revenue for domestic businesses and creates jobs for workers. On the other hand, a negative trade balance, or a trade deficit, indicates that a country is importing more goods and services than it is exporting, which can have negative consequences for the economy. A trade deficit can lead to a loss of jobs in domestic industries that are unable to compete with foreign goods and services. It can also put pressure on the country's currency exchange rate, which can increase the cost of imports and reduce the purchasing power of consumers.

How Trade Balance is measured:

The trade balance is measured by comparing the value of a country's exports and imports of goods and services over a specific period. The value of exports is the total amount of goods and services that a country sells to other countries, while the value of imports is the total amount of goods and services that a country buys from other countries. To calculate the trade balance, we subtract the value of imports from the value of exports. If the result is positive, it means that the country has a trade surplus, while a negative result indicates a trade deficit. The trade balance is usually

expressed as a percentage of a country's GDP, which allows us to compare the trade balance of different countries.

Factors that influence Trade Balance:

Several factors can influence a country's trade balance. One of the most important factors is the level of domestic production and competitiveness. A country that produces goods and services that are in demand in international markets is likely to have a positive trade balance. On the other hand, a country that is unable to compete with foreign goods and services may have a negative trade balance. Another important factor is exchange rates. When a country's currency is strong relative to other currencies, its exports become more expensive and its imports become cheaper. This can lead to a trade deficit. Conversely, when a country's currency is weak relative to other currencies, its exports become cheaper and its imports become more expensive, which can lead to a trade surplus. Other factors that can influence the trade balance include government policies, trade agreements, and global economic conditions.

For example, a country that imposes tariffs or other trade barriers on foreign goods may have a trade surplus, while a country that has free trade agreements with other countries may have a trade deficit.

In conclusion, trade balance is an essential economic indicator that measures the difference between a country's exports and imports of goods and services. A positive trade balance is generally considered to be a sign of economic strength, while a negative trade balance can have negative consequences for the economy.

6.3 Balance of Payment

The Balance of Payments (BOP) is an accounting record of all the economic transactions that take place between a country and the rest of the world over a given period.

The BOP is divided into two main accounts:

a. Current account
b. Capital and financial account.

These accounts record different types of transactions that occur between countries and provide valuable information on a country's international economic relationships.

BOP structure

Receipts (Credits)	*Payments (Debits)*
1) Exports of goods	1) Imports of goods
Trade Account Balance	
2) Exports of services	2) Imports of services
3) Interests, profits and dividends received	3) Interests, profits and dividends paid
4) Unilateral receipts	4) Unilateral Payments
Current Account Balance (1 to 4)	
5) Foreign Investments	5) Investments abroad
6) Short term borrowing	6) Short term lending
7) Medium and long term borrowing	7) Medium and long term lending
8) Statistical discrepancy (Errors and omission)	
Capital Account Balance (5 to 8)	
9) Change in reserves (+)	9) Change in reserves
Total Receipts = Total payments	

1. Exports	250.5
2. Imports	-381.1
3. Trade balance (2 – 1)	**-130.6**
4. Invisibles (net)	84.6
(a)Non-factor income	48.8
(b)Income	-17.3
(c)Pvt. Transfers	53.1
5. Current account balance (3 + 4)	**-45.9**
6. External assistance (net)	4.9
7. Commercial borrowing (net)	12.5
8. Short-term debt	11.0
9. Banking Capital of which NR deposits (net)	4.9 3.2
10. Foreign investment (net)	39.7
Of which: (i) FDI (net)	9.4
(ii)Portfolio	30.3
11. Other flows (net)	-11.0
12. Capital account total (net)	**62.0**
13. Errors and Omissions	-3.0
14. Balance of payments [5 + 12+13]	**13.1**
15. Reserve use (- increase)	-13.1

An example of Balance of International Payments with respect to India

The Current Account

The current account records all the transactions related to trade in goods and services, income from investments, and current transfers. The trade in goods refers to the exchange of physical goods between countries. This includes exports and imports of goods such as cars, electronics, and agricultural products. Services trade includes things like transportation, travel, and communication. Income from investments refers to the profits or losses earned by foreign investors on their investments in a country, such as dividends on stocks or interest on bonds.

Current transfers refer to the money sent between individuals or organizations in different countries without any goods or services being exchanged, such as foreign aid, remittances, or donations. When a country has a current account surplus, it means that the value of exports and income from investments is higher than the value of imports and current transfers. In other words, the country is earning more from its international transactions than it is spending. A current account deficit, on the other hand, occurs when the value of imports and current transfers is higher than the value of exports and income from investments. This means that the country is spending more than it is earning.

The Capital and Financial Account

The capital and financial account records all the transactions related to financial assets such as stocks, bonds, and bank deposits, as well as investments such as foreign direct investment (FDI) and portfolio investment (PI). FDI is when a company invests directly in a foreign country, such as by building a factory or buying a local business. Portfolio investment, on the other hand, refers to investments in financial assets that do not involve direct control over a company or business. The capital and financial account also includes transactions related to borrowing and lending between countries. This includes loans, such as those made by banks or governments, as well as foreign aid, which is often given as loans with concessional terms. In addition, the capital and financial account records any changes in the value of assets, such as changes in the value of foreign currency holdings. A surplus in the capital and financial account means that a country is receiving more investment and borrowing more from other countries than it is lending to them. A deficit, on the other hand, indicates that a country is lending more to other countries than it is borrowing from them.

Overall Balance of Payments

The overall balance of payments is calculated by summing the current account balance and the capital and financial account balance. When a country has a surplus in the overall balance of payments, it means that it is earning more than it is spending on both its current account and its capital and financial account. A deficit, on the other hand, indicates that the country is spending more than it is earning.

Implications of the Balance of Payments

The balance of payments is an important indicator of a country's international economic relationships and can provide valuable insights into its economic health. For example, a current account surplus may indicate that a country is competitive in international trade and has strong export industries. A capital and financial account surplus may indicate that a country is an attractive destination for foreign investment. On the other hand, a current account deficit may suggest that a country is relying too heavily on imports or is losing competitiveness in certain sectors. A capital and financial account deficit may indicate that a country is experiencing capital flight, which can lead to economic instability. Policymakers use the BOP to identify areas where they need to take action to address imbalances in the economy. For example, a country with a persistent current account deficit may need to increase its exports, reduce its imports, or attract more foreign investment.

Another use of the BOP is to monitor a country's exchange rate. The exchange rate is the value of a country's currency in relation to another currency. If a country has a current account deficit, its currency may be devalued, making its exports more competitive and its imports more expensive. Conversely, a country with a current account surplus may see its currency appreciate, making its exports more expensive and its imports more competitive. In conclusion, the Balance of Payments is a crucial tool for understanding a country's economic performance and identifying areas that need improvement. It provides policymakers with information on a country's trade relationships and its ability to finance its current account deficit. By monitoring the BOP, policymakers can take action to address imbalances in the economy and promote long-term economic growth.

6.4 International Flow of Capital and Goods

The international flow of capital and goods refers to the movement of money and physical goods between countries. This flow is a crucial aspect of the global economy, as it allows for investment, trade, and economic growth. Capital flows are a critical component of the international flow of capital and goods. Capital flows can take the form of foreign direct investment (FDI) or portfolio investment. FDI occurs when companies invest in businesses in other countries, often in the form of acquisitions or joint ventures. Portfolio investment, on the other hand, involves buying and selling stocks, bonds, and other financial instruments in international markets. FDI is often seen as a critical source of economic growth and development for countries. FDI can bring new technologies, management practices, and capital to host countries, which can lead to increased productivity and higher economic output. FDI can also create jobs and help to diversify a country's economy. Portfolio investment is another important aspect of capital flows. Portfolio investment allows investors to buy and sell stocks, bonds, and other financial instruments in international markets. This can provide investors with greater diversification and potentially higher returns. However, portfolio investment can also be volatile, as investors may quickly move their money in and out of a country depending on economic conditions.

Goods flows are also another critical aspect of the international flow of capital and goods. Goods flows refer to the movement of physical goods between countries, including exports and imports of raw materials, finished products, and services. Globalization has made it easier for companies to move production facilities and source goods from different countries to take advantage of lower costs and increase profits. Goods flows can have both positive and negative effects on countries. On the one hand, exports can provide countries with a source of income and increase employment. Imports, on the other hand, can provide consumers with access to a wider range of goods and services at lower prices. However, goods flows can also lead to job losses in industries that cannot compete with lower-cost imports, and can lead to environmental degradation. Governments and international organizations have developed policies and regulations to manage the international flow of capital and goods.

These policies aim to promote economic growth while protecting the interests of individuals, businesses, and the environment.

Firstly, one important policy tool for managing the international flow of capital and goods is trade agreements. Trade agreements are agreements between countries that reduce or eliminate tariffs and other barriers to trade. By reducing barriers to trade, countries can increase the flow of goods and services between them, which can lead to increased economic growth and development.

Secondly, another important policy tool for managing the international flow of capital and goods is investment treaties. Investment treaties are agreements between countries that protect the rights of

investors and provide for dispute resolution mechanisms. Investment treaties can provide investors with greater certainty and protection when investing in other countries, which can lead to increased investment flows.

Thirdly, financial regulations are also an essential policy tool for managing the international flow of capital and goods. Financial regulations aim to promote stability in financial markets and prevent financial crises. For example, regulations may require banks to hold a certain amount of capital to protect against losses or may limit the amount of leverage that banks can take on.

In conclusion, the international flow of capital and goods is a critical aspect of the global economy. Capital flows allow for investment and economic growth, while goods flows allow for trade and access to a wider range of goods and services. However, capital and goods flows can also lead to unequal distribution of wealth and income, job losses, and environmental degradation. Governments and international organizations have developed policies and regulations to manage the international flow of capital and goods, including trade agreements, investment treaties, and financial regulations, which aim to promote economic growth while protecting the interests of individuals, businesses, and the environment.

6.5 Mundell Fleming Model

Mundell- Fleming model is an extension of the IS-LM model. This model is also called the IS-LM-BP model. The Mundell–Fleming model is based on the following equations:

The IS curve:

$$Y=C(Y-T)+I(if)+G+NX(R)$$

where NX is net export, Y is the level of national income, if, is the world interest rate and R is the exchange rate. The IS equation describes the goods market equilibrium.

The LM curve:

$$M/P=L(if, Y)$$

Where Y is the level of national income. The LM equation describes the money market equilibrium.

The BOP (Balance of Payments) Curve:

$$BOP=CA+KA$$

where BOP is the balance of payments surplus, CA is the current account surplus, and KA is the capital account surplus.

Assumptions of the modal

1. A small open economy
2. Tax rates are the same everywhere
3. Foreign investors do not face political risk
4. Perfect capital mobility
5. Rate of interest is determined by the world interest rate.

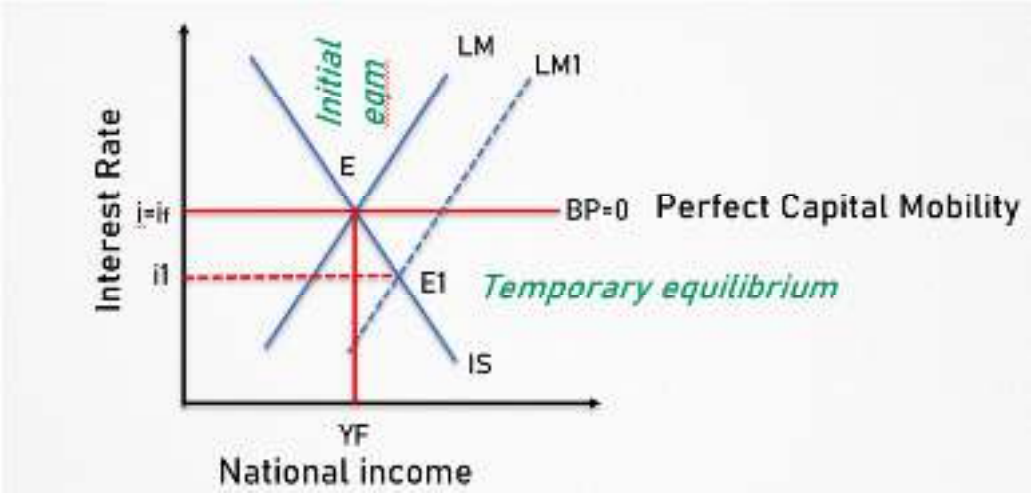
Mundell-Fleming Model of the Small Open Economy (under Fixed Exchange Rate)

Under fixed exchange rates and perfect capital mobility, a country can't move out of line with those prevailing in the world market. Any attempt at independent monetary policy leads to capital flows and needs to intervene until interest rates are back in line with those in the world market.

Effectiveness of Monetary Policy under Fixed Exchange Rate

With perfect mobility of capital, under a fixed exchange regime, monetary policy both expansionary and contractionary in a small open economy is quite ineffective to influence national income (output) levels and employment.

Expansionary monetary policy (Fixed exchange rate)



Here, i is domestic interest rate and if is the world interest rate.

IS curve is a negatively sloped curve showing the negative relationship between interest rate and income level. LM curve is positively sloped because of the positive relationship between interest rate and income level. The horizontal straight line BP shows perfect capital mobility among the countries. The horizontal line BP= 0 at the domestic interest rate i is equal to the foreign interest rate if (i = if). It also shows that the country has neither deficit nor surplus in its balance of payments, that is, its balance of payments is in equilibrium.

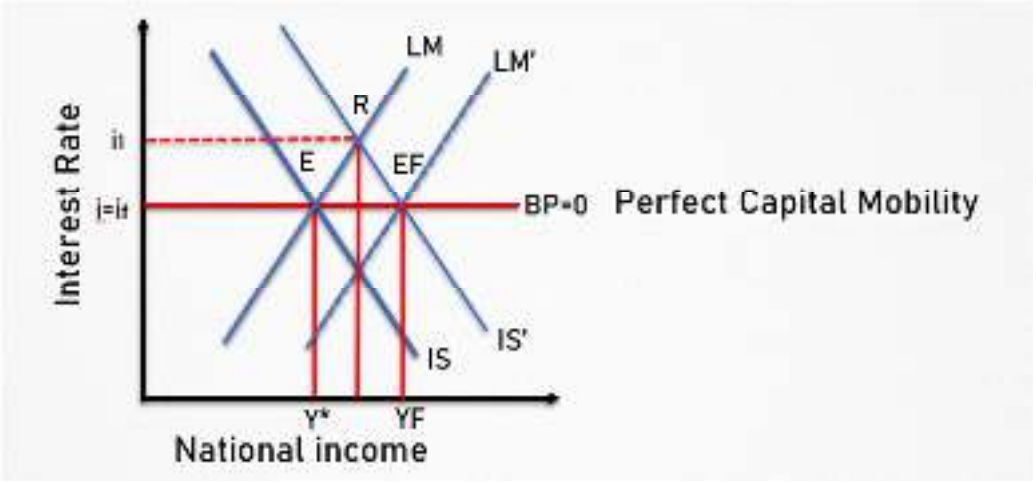
At any other interest rate massive capital flows will occur which will cause disequilibrium in the balance of payments and will force the Central Bank to intervene to maintain the exchange rate. Initially at point E, IS-LM curves intersect at E which determines the domestic rate of interest i which is equal to the foreign rate of interest if.

With monetary expansion, the LM curve shifts to the right and as a result, the economy moves to the new equilibrium position E' where the domestic rate of interest has fallen to i1. As domestic interest falls below the world interest rate, capital outflows from the domestic country. As a result supply of foreign exchange will decline in the domestic country. Which depreciates domestic currency. At the new position E' economy will have a large deficit in the balance of payments which will exert pressure on the exchange rate of domestic currency to depreciate.

Under the fixed exchange rate, to maintain the exchange rate, the country's Central Bank will intervene; it will sell foreign currency reserves in the foreign exchange market. Again the Central Bank will be forced to reduce domestic money supply and as a result LM curve shift back to its original position from LM' to LM. The original equilibrium position will be established again. Where national income is Yf and interest rate is i= if . Therefore, under a fixed exchange rate with perfect capital mobility monetary policy is ineffective to change national income.

While expansionary monetary policy under a fixed rate regime is quite ineffective to affect national income and output, fiscal policy is highly effective, given the perfect mobility of capital. Suppose adopting an expansionary fiscal policy Government increases its expenditure with the money supply remaining unchanged.

Expansionary Fiscal policy (Fixed exchange rate)



Initial equilibrium point is (E). Here, i is domestic interest rate and if is the world interest rate.

The increase in government expenditure (Expansionary fiscal policy) causes a shift in the IS curve to the right to the new position IS'. This raises both the domestic interest rate (i) and the level of national income (output). The higher domestic rate of interest as compared to the world interest rate (if) will cause capital inflows into the economy. These capital inflows will bring about appreciation in the exchange rate of the domestic currency.

Under the fixed exchange rate, to maintain the exchange rate pegged the Central Bank will have to expand the money supply which will cause a shift in the LM curve to the right (i.e. to LM') and increase national income further.

With the increased money supply the LM curve shifts to the new position LM' and the domestic rate of interest falls back to the original level so that it is again equal to the world interest rate (i = if). But a new equilibrium is established at point EF. At the new equilibrium point, national income increases to YF but I = if.

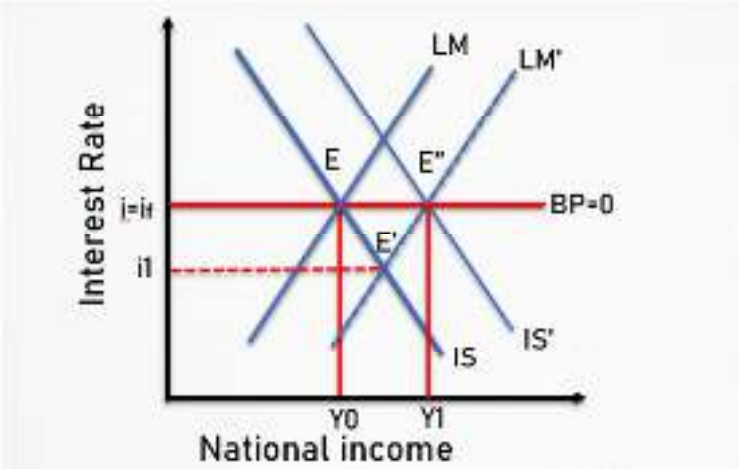
Fiscal expansion leads to an increase in national income by Y* YF, equal to the Keynesian multiplier effect. The Central Bank under the fixed exchange rate system with perfect capital mobility cannot conduct an independent monetary policy to achieve domestic economic stability. Therefore, any monetary policy is ineffective. But under this condition, fiscal policy is effective to change national income. However, the government can use expansionary fiscal policy to raise the level of national income and employment.

Mundell-Fleming Model of the Small Open Economy (under Flexible Exchange Rate)

Under a flexible exchange rate regime, the Central Bank does not intervene in the market for foreign exchange. The exchange rate adjusts itself to bring the demand for and supply of foreign exchange in equilibrium. Therefore, under a flexible exchange rate system and without the intervention of the Central Bank, the balance of payments must always be in equilibrium, that is, there is neither any deficit nor any surplus.

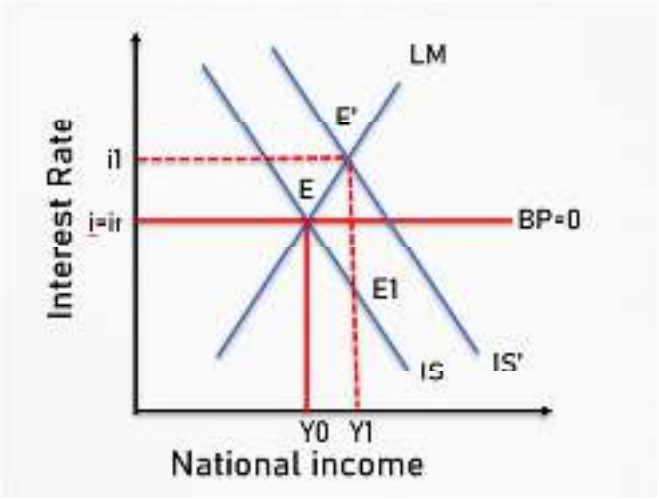
In the Mundell-Fleming model the assumption of perfect capital mobility ensures that at only one interest rate which is equal to the world interest rate (i = if) the balance of payments is zero, that is, in equilibrium (BP = 0).

Expansionary monetary policy (Flexible exchange rate)



Initial equilibrium point is (E). Here, i is domestic interest rate and if is the world interest rate and national income is Y0. Initial equilibrium point is (E). Here, i is the domestic interest rate, and if is the world interest rate and national income is Y0. Due to an increase in money supply, LM shifts to LM'. At new equilibrium point i< if Hence, capital outflows, foreign currency decrease, and domestic currency depreciate. Export cheaper; import costlier; X>M, IS rises to IS'. At final eqm, E''; interest i= if and income =Y1

Expansionary Fiscal Policy



With the expansionary fiscal policy, the IS curve shifts towards the right to IS' and a new equilibrium point E' is established. At E', the domestic interest rate becomes greater than the world interest rate i.e. (i > if.) This results in an inflow of capital from other countries and as a result supply of foreign exchange increases. Therefore, domestic currency appreciates. With the appreciation of the domestic currency, export becomes costlier and import becomes cheaper and net export decreases. As a result, IS curve shifts leftward back to the original position from IS' to IS. The equilibrium point is also shifted back from E' to E. Where (i = if.) and national income becomes Y0. Therefore under a flexible exchange rate with perfect capital mobility, monetary policy is effective but fiscal policy is ineffective.

6.6 Open Economy Model

An open economy model is a macroeconomic model that analyzes the interactions between a country's domestic economy and the rest of the world. In this model, international trade, capital flows, and exchange rates play a significant role in determining the overall health of the economy. The key components of an open economy model:

Balance of Payments: The balance of payments is a record of all financial transactions between a country and the rest of the world. It includes trade in goods and services, investment flows, and transfers of funds. The balance of payments is divided into two main categories:

a) The current account and

b) The capital account.

The current account records transactions related to trade in goods and services, while the capital account records investment flows.

Exchange Rates: Exchange rates are the value of one currency in terms of another. In an open economy, exchange rates are determined by the supply and demand for currencies in the foreign exchange market. Changes in exchange rates can have significant effects on a country's trade balance and the cost of imports and exports.

International Trade: International trade plays a vital role in an open economy model. Countries export goods and services to earn foreign exchange, which can be used to pay for imports. International trade also affects domestic prices and can lead to changes in the composition of output.

Capital Flows: Capital flows refer to the movement of financial assets between countries. In an open economy, capital flows can take the form of foreign direct investment, portfolio investment, or borrowing and lending. Capital flows can have significant effects on exchange rates, interest rates, and the availability of credit in the domestic economy.

Monetary and Fiscal Policy: Monetary and fiscal policy are essential tools that policymakers can use to manage the domestic economy in an open economy model. Monetary policy involves the manipulation of interest rates and the money supply to achieve specific economic goals, such as controlling inflation or promoting growth. Fiscal policy involves changes in government spending and taxation to achieve similar goals.

The open economy model is based on the principles of supply and demand. In an open economy, the supply of goods and services is determined by the domestic producers and the demand for goods and services is determined by both domestic and foreign consumers.

Changes in the level of demand for goods and services can lead to changes in the exchange rate, which, in turn, can affect the trade balance.

One of the key challenges of an open economy model is managing the balance of payments. If a country imports more goods and services than it exports, it will run a trade deficit, which can lead to a decline in the value of the currency. To manage the balance of payments, policymakers can use a variety of tools, including -

- Exchange rate policies,
- Trade policies, and
- Capital controls

Another challenge of the open economy model is managing inflation. In an open economy, changes in the exchange rate can affect the price of imported goods, which can, in turn, affect the overall level of inflation. To manage inflation, policymakers can use monetary and fiscal policy to control the money supply and manage demand in the domestic economy.

In conclusion, the open economy model is a useful framework for understanding the interactions between a country's domestic economy and the rest of the world. It is based on the principles of supply and demand and takes into account the important role of international trade, capital flows, and exchange rates. Managing the balance of payments and inflation are key challenges of the open economy model, and policymakers can use a variety of tools to address these challenges.

Summary

1. In an open economy, countries engage in international trade, importing goods and services that they do not produce themselves, and exporting those that they do. This allows countries to specialize in the production of goods and services in which they have a comparative advantage, leading to increased efficiency and productivity.
2. An open economy is vulnerable to external shocks, such as changes in exchange rates, fluctuations in commodity prices, or global economic downturns. These shocks can have a significant impact on the domestic economy and can lead to increased economic volatility.
3. The current account records all the transactions related to trade in goods and services, income from investments, and current transfers. The trade in goods refers to the exchange of physical

goods between countries. This includes exports and imports of goods such as cars, electronics, and agricultural products. Services trade includes things like transportation, travel, and communication. Income from investments refers to the profits or losses earned by foreign investors on their investments in a country, such as dividends on stocks or interest on bonds.

4. As domestic interest falls below the world interest rate, capital outflows from the domestic country. As a result supply of foreign exchange will decline in the domestic country which depreciates domestic currency.

Keywords

- Fixed exchange rate
- Flexible exchange rate
- Monetary policy
- Fiscal policy
- Open economy
- Central bank

Self Assessment

1. What are different advantages of open economy?

A. It lead to increase in economic growth
B. It lead to improvement in efficiency
C. Greater competitiveness
D. All of the above

2. Which of the following are elements of open economy?

A. International trade
B. Foreign investment
C. Closed system
D. Both a and b

3. An open economy enables countries to specialize in the production of goods and services in which they have a comparative advantage.

A. True
B. False

4. If exports are more than imports then the country has

A. Negative trade balance
B. Positive trade balance
C. Trade balance
D. None of the above

5. Current account includes the

A. Goods account
B. Service account

C. Unilateral trade payment account
D. All of the above

6. Capital account includes
A. Foreign direct investment
B. Portfolio investment
C. Service account
D. Both a and b

7. Balance of payment will be in deficit if
A. Export>imports
B. Imports>exports
C. Exports=imports
D. Import<exports

8. Portfolio investment involves
A. Buying of stocks
B. Selling of stocks
C. Buying of bonds
D. All of the above

9. Which of the following are assumptions of Mundel Fleming model?
A. Economy is a open economy
B. Tax rates are the same everywhere
C. Foreign investors do not face political risk
D. All of the above

10. As money supply will increase the rate of interest will
A. Decrease
B. Increase
C. Remain constant
D. None of the above

11. With the change in monetary policy
A. LM curve will shift
B. IS curve will shift
C. Both IS and LM curve will shift rightward
D. Both IS and LM curve will shift leftward

12. With the change in fiscal policy
A. LM curve will shift
B. IS curve will shift
C. Both IS and LM curve will shift rightward
D. Both IS and LM curve will shift leftward

13. As domestic interest rate falls below the world interest rate

A. Capital will outflows from the domestic country
B. Capital will inflow in the domestic country
C. No impact on capital outflow
D. None of the above

14. Change in government expenditure causes a change in
A. IS curve
B. LM curve
C. Both IS and LM curves
D. None of the above

15. The domestic currency will appreciate when
A. Capital inflow increase
B. Capital outflow increase
C. Capital inflow decrease
D. None of the above

Answers for Self Assessment

1.	A	2.	D	3.	A	4.	B	5.	D
6.	D	7.	B	8.	D	9.	D	10.	A
11.	A	12.	B	13.	A	14.	A	15.	A

Review Questions

1. Critically examine Mundel Fleming model.
2. Critically examine the open economy model.
3. Critically examine the effectiveness of Monetary policy under fixed exchange rate system in Mundell Fleming model.
4. Write a detailed note on balance of payment.
5. What are benefits of open economy model? Explain

Further Reading

1. International Financial Management By Cheol S Eun And Bruce G Resnick, M.G. Hills
2. International Finance Management By Jeff Madura, Cengage Learning

Unit 07: Exchange Rate in Open Economy

CONTENTS

Objectives

- After studying this unit the students will be able to
- Learn about the importance of saving and investment in small open economy
- Discuss about exchange rate
- Learn about nominal and real exchange rate

Introduction

In an open economy, exchange rates play a crucial role in determining the value of one country's currency relative to another country's currency. An exchange rate is the price of one currency in terms of another. It has a significant impact on international trade, investment, and overall economic conditions.

7.1 Saving and Investment in a Small Open Economy

A small open economy refers to a nation that engages in international trade and has a relatively small share of the global market. In such an economy, the concepts of saving and investment play crucial roles in determining its growth, stability, and overall economic well-being.

Importance of Saving and Investment

Saving and investment are fundamental components of a nation's economic activity, contributing to its long-term growth and stability. Saving refers to the act of setting aside a portion of income for future use. Individuals, households, and businesses save for various reasons, such as creating an emergency fund, financing education or retirement, or making investments. Investment, on the other hand, refers to the allocation of saved resources towards productive activities that generate economic returns. Both saving and investment are vital for a small open economy due to the following reasons:

1. Capital Formation: Saving provides the necessary funds for investment, enabling the accumulation of capital stock, which is essential for economic growth and productivity improvements.
2. Productive Capacity: Investment helps expand the productive capacity of the economy, allowing it to produce more goods and services, thereby increasing employment opportunities and raising living standards.
3. Technological Advancement: Investment in research and development, infrastructure, and innovation facilitates technological progress, which enhances productivity and competitiveness in the global market.

In terms of the relationship between saving and investment, a fundamental principle known as the saving-investment identity holds true. This identity states that the total savings in an economy must equal the total investment. If a small open economy saves more than it invests, it generates a trade surplus, exporting capital to the rest of the world. This surplus can be invested abroad or held as foreign reserves. Conversely, if the economy invests more than it saves, it experiences a trade deficit and relies on borrowing from the rest of the world to finance the shortfall.

Factors that influence saving and investment:

In a small open economy, the saving and investment decisions of individuals and businesses are influenced by both domestic and international factors. The openness of the economy implies that it engages in trade and financial transactions with the rest of the world, impacting its saving and investment patterns.

Domestic Factors:

1. Disposable Income: Higher disposable income encourages saving as individuals have more resources available to set aside for future use.
2. Interest Rates: Higher interest rates can incentivize saving, as individuals are more likely to save to earn higher returns on their savings.
3. Fiscal Policies: Government policies such as taxation, public expenditure, and budget deficits can impact private savings and investment. For instance, higher taxes reduce disposable income, thereby reducing private savings. Similarly, government investment in infrastructure projects can crowd out private investment by absorbing available resources.
4. Economic Outlook: Favourable economic conditions, such as low unemployment and stable growth prospects, can instill confidence in individuals, leading to higher savings and investment.

External Factors:

1. Global Interest Rates: Discrepancies between domestic and global interest rates can impact capital flows.
2. Higher interest rates abroad can attract capital outflows, reducing domestic saving and investment.
3. Exchange Rates: Exchange rate fluctuations affect saving and investment decisions, as they impact the relative cost of imports and exports, influencing trade balances and capital flows.
4. Foreign Direct Investment (FDI): Inflows of FDI can contribute to higher investment levels in a small open economy, as foreign capital complements domestic saving.

Implications for Economic Development

The interplay between saving and investment in a small open economy has significant implications for its economic development:

1. Capital Accumulation: Adequate saving rates enable the accumulation of capital, supporting investments in physical infrastructure, human capital, and technological advancements, which are critical for sustained economic growth.
2. Trade Imbalances: Saving and investment imbalances can lead to trade deficits or surpluses. A high level of saving relative to investment can result in a trade surplus, while low saving relative to investment can lead to a trade deficit, influencing the current account balance.
3. Foreign Debt: In some cases, a small open economy may rely on foreign borrowing to finance investment projects. While foreign capital inflows can support economic growth, excessive borrowing can lead to a buildup of foreign debt, posing risks to financial stability.
4. External Shocks: Small open economies are vulnerable to external shocks, such as changes in global interest rates or commodity prices.

Adequate levels of saving and investment can enhance their resilience and stabilize the economy from external impact. To promote saving and investment, small open economies should adopt comprehensive policy measures. Fiscal policies should aim to balance government expenditure and revenue generation, ensuring a sustainable fiscal position. Prudent fiscal management reduces the need for external borrowing and frees up resources for private investment.

Monetary policies should focus on maintaining price stability and a favourable investment climate. Flexible exchange rate regimes help absorb external shocks and maintain competitiveness. Sound monetary policies manage inflation and ensure stable interest rates, influencing the cost of borrowing and investment decisions. In conclusion, saving and investment are integral to the economic development and growth of a small open economy. Saving helps accumulate financial resources, finance government expenditures, and maintain stability. Investment leads to capital stock expansion, productivity enhancement, and economic growth. Promoting saving and investment requires a comprehensive approach, including fiscal discipline, sound monetary policies, financial deepening, and investment in human capital and infrastructure. By implementing these strategies, small open economies can create a favourable environment for saving and investment, leading to sustainable economic prosperity.

7.2 Exchange Rates - Nominal and Real Exchange Rate & its Determination

Exchange rates are a crucial aspect of the global economy, influencing international trade, investment flows, and financial transactions. Understanding the concepts of nominal exchange rates and real exchange rates, as well as the determinants of exchange rates, is essential for comprehending the dynamics of currency valuation and its impact on economic activity. The nominal exchange rate refers to the rate at which one currency can be exchanged for another currency. It represents the relative value of two currencies in the foreign exchange market.

 **Example:** For instance, if the nominal exchange rate between the US dollar and the Euro is 1.20, it means that one US dollar can be exchanged for 1.20 Euros.

On the other hand, the real exchange rate takes into account the relative prices of goods and services in different countries. It reflects the purchasing power of one currency relative to another currency. The real exchange rate is calculated by adjusting the nominal exchange rate for the ratio of price levels between two countries. It helps determine the competitiveness of a country's goods and services in the global market.

To calculate the real exchange rate, the following formula is used:

Real Exchange Rate = (Nominal Exchange Rate × Domestic Price Level) / Foreign Price Level

The real exchange rate considers changes in relative prices and indicates whether a currency is overvalued or undervalued. If the real exchange rate is high, it means that a country's goods and services are relatively expensive compared to its trading partners. Conversely, a low real exchange

rate suggests that a country's goods and services are relatively cheap. Several factors influence the determination of exchange rates. Understanding these determinants is crucial for assessing currency valuation and making economic decisions.

7.3 Factors that Impact Exchange Rates

1. Interest Rates: Interest rates play a vital role in determining exchange rates. Higher interest rates tend to attract foreign investment, increasing the demand for a currency and strengthening its value. Investors seek higher returns on their investments, leading to increased demand for currencies in countries with higher interest rates.
2. Inflation Rates: Inflation rates also influence exchange rates. Countries with lower inflation rates generally experience an appreciation in their currency value as their goods become relatively cheaper. Lower inflation means the purchasing power of the currency remains relatively stable, attracting investors and strengthening the currency's value.
3. Balance of Payments: The balance of payments, which includes the trade balance, capital flows, and financial transactions, impacts the demand and supply of a currency. A country with a trade surplus (exports exceeding imports) experiences a higher demand for its currency, leading to currency appreciation. Conversely, a trade deficit (imports exceeding exports) can put downward pressure on the currency.
4. Economic Performance: Economic performance indicators such as GDP growth, unemployment rates, and productivity levels impact exchange rates. Strong economic growth, low unemployment rates, and stable political conditions attract investors and can strengthen a currency. A robust economy signals a favourable investment climate, increasing the demand for the currency.
5. Government Policies: Monetary and fiscal policies implemented by governments can significantly affect exchange rates. Central banks can influence exchange rates through actions such as interest rate adjustments, quantitative easing, or foreign exchange market interventions. Government fiscal policies, including taxation and public spending, can also impact the exchange rate.
6. Market Speculation: Short-term movements in exchange rates can be influenced by market expectations, speculation, and sentiment. Traders and investors may buy or sell currencies based on anticipated future events or changes in economic policies. Speculative activities can lead to fluctuations in exchange rates, especially in the short term.

It is important to note that exchange rates are determined in the foreign exchange market, where currencies are bought and sold. The interplay of supply and demand for different currencies in this market determines their relative values. If the demand for a currency exceeds its supply, its value appreciates. Conversely, if the supply of a currency exceeds its demand, its value depreciates.

7.4 National Income Accounting

"National income is both a flow of goods and services and a flow of money incomes. It is therefore called national product as often as national income." - Paul Studenski

National income is defined as the money value of all the final goods and services produced in an economy during an accounting period of time, generally one year.

Accounting Year in India= 1st April-31st March

National income accounting is based on the idea that the economic activities of a country can be measured and aggregated to provide a comprehensive picture of its economic output, income, and expenditure.

Concepts of national income

- Gross domestic product
- Gross national product
- Net National Product
- Market Prices and Factor Costs
- Personal Income
- Disposable Income

Gross domestic product

This is the basic national accounting measure of the total output or aggregate supply of goods and services. Gross Domestic Product is defined as the total market value of all final goods and services produced in a year in the domestic territory of a country. Two things must be noted in regard to gross national product. First, it measures the market value of annual output. In other words, GDP is a monetary measure. There is no other way of adding up the different sorts of goods and services produced in a year except in terms of their money prices. But in order to know accurately the changes in physical output, the figure for gross national product is adjusted for price changes. Secondly, for calculating gross domestic product accurately, all goods and services produced in any given year must be counted once, and not more than once. Most of the goods go through a series of production stages before reaching a market. As a result, parts or components of many goods are bought and sold many times. Hence to avoid counting several times the parts of goods that are sold and resold, gross national product includes the market value of only final goods and ignores transactions involving intermediate goods.

Gross National Product (GNP)

Another important concept of national income is gross national product (GNP). Gross national product is the money value of all final goods and services produced by normal residents as well as non-residents in the domestic territory of a country and also not includes net factor income earned from abroad. Thus difference between gross domestic product (GDP) and gross national product (GNP) at market prices arises due to the existence of 'net factor income from abroad '. Gross domestic product does not include net factor income from abroad, whereas gross national product includes it. Therefore, Gross National Product (at market prices) or GNP_{MP} = GDP_{MP} + net factor income from abroad.

Net Domestic Product

The second important concept of national income is that of net domestic product (NDP). In the production of gross domestic product of a year, we consume or use up some fixed capital, i.e., equipment, machinery, etc. The capital goods, like machinery, wear out or fall in value as a result of its consumption or use in the production process. This consumption of fixed capital or fall in the value of fixed capital due to wear and tear is called depreciation. When charges for depreciation are deducted from the gross national product we get net national product. Clearly, it means the market value of all final goods and services produced in a year after providing for depreciation. Therefore, it is also called 'domestic product or income at market prices'.

Net domestic product Gross Domestic Product at market prices –Depreciation

National Income

National Income at factor cost which is also simply called national income means the sum of all incomes earned by resource suppliers for their contribution of land, labour, capital and entrepreneurial ability which go into the year's net production. In other words, national income (or national income at factor cost) shows how much it costs society in terms of economic resources to produce net output. It is really the national income at factor cost for which we use the term National Income. The difference between national income (or national income at factor cost) and net national product (national income at market prices) arises from the fact that indirect taxes and subsidies cause market prices of output to be different from the factor incomes resulting from it.

Suppose for instance, a metre of mill cloth sold for ` 200 includes ` 25 on account of the excise and the sales tax. In this case while the market price of the cloth is ` 200 a metre, the factors engaged in its production and distribution would receive ` 175 a metre. The value of cloth at factor cost would thus be equal to its value at market price less the indirect taxes on it. On the other hand, a subsidy causes the market price to be less than the factor cost. Suppose handloom cloth is subsidised at the

rate of ` 10 per metre and it sells at ` 90 per metre. Then while the consumer pays ` 90 per metre, the factors engaged in the production and distribution of such cloth will receive ` 100 per metre (` 90 + 10 = ` 100). The value of handloom cloth at factor cost would thus be equal to its market price plus the subsidies paid on it. It follows, therefore, that the national income (or national income at factor cost) is equal to net national product minus indirect taxes plus subsidies.

Personal Income

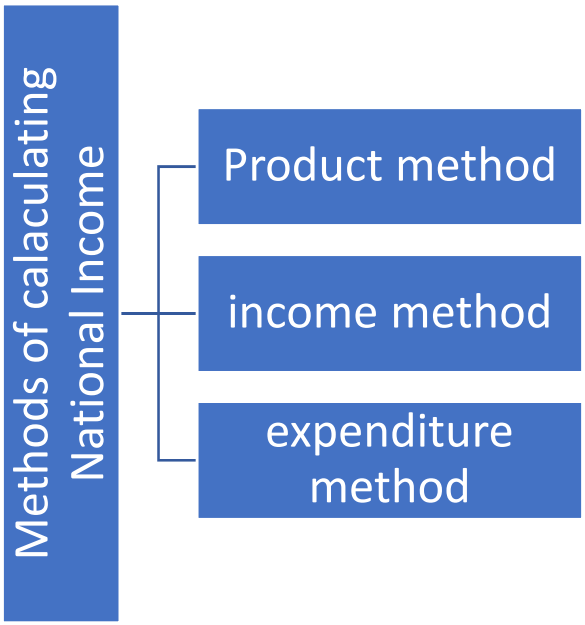
Personal Income is the sum of all incomes actually received by all individuals or households during a given year. National income, that is, total incomes earned and personal income, that is, total incomes received must be different because some incomes which are earned such as social security contributions, corporate income taxes and undistributed corporate profits are not actually received by households, and conversely, some incomes which are received like transfer payments are not currently earned (examples of transfer payments are old-age pensions, unemployment compensation, relief payments, interest payments on the public debt, etc.). Obviously, in moving from national income as an indicator of income earned to personal income as an indicator of income actually received, we must subtract from national income those three types of income which are earned but not received and add those incomes which are received but currently not earned. Therefore,

Personal Income = National Income – Social Security Contributions – Corporate Income Taxes – Undistributed Corporate Profits + Transfer Payments.

Personal Disposable Income (PDI)

Even whole of the incomes which are actually received by the people are not available to them for consumption. This is because governments levy some personal taxes such as income tax, personal property taxes. Therefore, after a part of personal income is paid to government in the form of personal taxes like income tax, personal property taxes, etc., what remains of personal income is called personal disposable income. Therefore,

Personal Disposable Income (PDI) = Personal Income – Personal Taxes.



Product method

Value added method is also called output method or production method. In this method, the contribution of each enterprise to the generation of flow of goods and services is measured. Under this method, the economy is divided into different industrial sectors such as agriculture, fishing, mining, construction, manufacturing, trade and commerce, transport, communication and other services. Then, the net value added at factor cost (NVA_{FC}) by each productive enterprise as well as by each industry or sector is estimated. Measuring net value added at factor cost (NVA_{FC}) by each industry requires first to find out the value of output.

Let us explain how we arrive at net value added at factor cost (NVA_{FC}) from value of output step by step. An important estimate which we have to make in this method is to find out the value of various goods and services produced by enterprises in the domestic territory of a country. The quantity of goods and services produced by a particular enterprise multiplied by their market prices is called value of output. By summing up the value of output of all producing enterprises in a given industry or a sector we can obtain the value of output of that industry or sector. A major part of output of a firm or enterprise is sold in the market and termed as sales. The remaining part of output which is not sold in the accounting year is added to the stock of goods or inventories. Thus.

Value of output of an enterprise = Sales + Change in Stocks

Gross Value Added at Market Prices (GVA_{MP}): Gross value added measures the contribution to the value of output of a product produced during a year. As mentioned above, value of output is estimated by multiplying the quantity of output with the market prices. Therefore, gross value added at market prices by a production unit is obtained by deducting the value of intermediate consumption(that is, the value of intermediate goods such as raw materials used from the value of output (at market prices) produced. Thus.

Gross value added at market prices (GVA_{MP}) = Value of Output – Intermediate Consumption

A firm disposes of its value added at market prices (GVA_{MP}) among the three items : (1) making depreciation provision for consumption of fixed capital during the year, (2) making payments of indirect taxes such as excise duties, sales tax, import duty to the government, and (3) making factor payments such as wages, interest and profits to the factors of production whose services have been used for the production of a good.

Net Value Added at Market Prices (NVA_{MP}): When from gross value added at market prices we deduct depreciation on account of consumption of fixed capital during the production process of a good during the year, we get Net Value Added at market prices (NVA_{MP}). Thus

NVA_{MP} = GVA_{MP} – Consumption of Fixed Capital i.e. Depreciation Thus net value added is net of depreciation or consumption of fixed capital.

Net Value Added at Factor Cost (NVA_{FC}): When adjustment is made in net value added at market prices (NVA_{MP}) for the payment of net indirect taxes, (that is, indirect taxes such as sales tax, excise duty, customs duties to the government minus subsidies received from the government) we get Net Value Added at Factor Cost (NVA_{FC}) This is because after the subtraction of depreciation amount and net indirect taxes what remains is used for making payments to factors of production such as wages to labour, interest on capital borrowed, rent for land and building hired from others and profits and dividends to entrepreneur. In other words, NVA_{FC} measures the value of factor cost a firm has to incur.

The net values added at factor cost (NVA_{FC}) by all productive enterprises of an industry or sector gives us the net value added at factor cost of each industry or sector. We then add up net values added at factor cost by all industries or sectors to get net domestic product at factor cost (NDP_{FC}). Lastly, to the net domestic product we add the net factor income from abroad to get net national product at factor cost (NNP_{FC}) which is also called national income. Thus, NI or NNP_{FC} = NDP_{FC} + Net factor income from abroad.

This method of calculating national income can be used where there exists a census of production for the year. In many countries, the data of production of only important industries are known. Hence this method is employed along with other methods to arrive at the national income.

Notes: The one great advantage of product method is that it reveals the relative importance of the different sectors of the economy by showing their respective contributions to the national income.

Limitations of Product Method

1. Problem of Double Counting
2. Not Applicable to the Tertiary Sector
3. Exclusion of Non-Marketed Products
4. Self Consumption of Output

Precautions

The following precautions should be taken while measuring national income of a country through value added method:

1. Imputed rent values of self-occupied houses should be included in the value of output. Though these payments are not made to others, their values can be easily estimated from prevailing values in the market.
2. Sale and purchase of second-hand goods should not be included in measuring value of output of a year because their values were counted in the year of output of the year of their production. Of course, commission or brokerage earned in their sale and purchase has to be included because this is a new service rendered in the current year.
3. Value of production for self-consumption are to be counted while measuring national income. In this method, the production for self-consumption should be valued at the prevailing market prices.
4. Value of services of housewives are not included because it is not easy to find out correctly the value of their services.
5. Value of intermediate goods must not be counted while measuring value added because this will amount to double counting.

Income Method

This method approaches national income from distribution side. In other words, this method measures national income at the phase of distribution and appears as income paid and/or received by individuals of the country. Thus, under this method, national income is obtained by summing up of the incomes of all individuals of a country. Individuals earn incomes by contributing their own services and the services of their property such as land and capital to the national production. Therefore, national income is calculated by adding up the rent of land, wages and salaries of employees, interest on capital, profits of entrepreneurs (including undistributed corporate profits) and incomes of self employed people. This method of estimating national income has the great advantage of indicating the distribution of national income among different income groups such as landlords, owners of capital, workers, entrepreneurs. Measurement of national income through income method involves the following main steps:

Like the value added method, the first step in income method is also to identify the productive enterprises and then classify them into various industrial sectors such as agriculture, fishing, forestry, manufacturing, transport, trade and commerce, banking, etc. The second step is to classify the factor payments. The factor payments are classified into the following groups:

1. Compensation to employees which includes wages and salaries, employers' contribution to social security schemes.
2. Rent and also royalty, if any.
3. Interest.
4. Profits: Profits are divided into three sub-groups:
    I. Dividends
    II. Undistributed profits
    III. Corporate income tax
5. Mixed income of the self-employed: In India, as in other developing countries, there is fifth category of factor income which is termed as mixed income of self-employed. In India a good number of people are engaged in household industries, in family farms and other unorganised enterprises. Because of self-employment nature of the business it is difficult to separate wages for the work done by the self-employed from the surplus or profits made by

them. Therefore, the incomes earned by them are mix of wages, rent, interest and profit and are, therefore, called mixed income of the self-employed.

The third step is to measure factor payments. Income paid out by each enterprise can be estimated by gathering information about the number of units of each factor employed and the income paid out to each unit of every factor. Price paid out to each factor multiplied by the number of units of each factor employed would give us the factor's income. The adding up of factor payments by all enterprises belonging to an industrial sector would give us the incomes paid out to various factors by a particular industrial sector. By summing up the incomes paid out by all industrial sectors we will obtain domestic factor income which is also called net domestic product at factor cost (NDP_{FC}). Finally, by adding net factor income earned from abroad to domestic factor income or NDP_{FC} we get net national product at factor cost (NNP_{FC}) which is also called national income.

Compensation to Employees

From the above items of income categories compensation to employees requires further explanation. Compensation to employees by the producers is the sum of wages and salaries, paid both in cash and kind, and contribution to social security schemes of the employees made by the employers. Thus, it has the following components:

Wages and Salaries: These include all payments made by the employers to their employees, both in cash and kind, for the services they render to their employers. Wages and Salaries Payable in Cash. They include the following:

a. Wages and salaries received in cash by the employees from their employers.
b. Payments received by the employees for overtime work done by them.
c. Travelling allowance received by the employees for going to and coming home from their work places.
d. Bonuses, if any, receivable by the workers.
e. Dearness allowance paid to the employees to neutralise the rise in cost of living.
f. Vacation allowance and sick leave allowance.
g. Leave travelling allowance (LTC).
h. Commission provided, if any, to the sales staff on the sales.

Wages and Salaries in Kind: These are the remunerations in kind received in the form of goods and services by the employees for their use by themselves or by the members of their households. The following are some important types of remuneration received in kind.

a. Housing accommodation provided free of cost.
b. Free meals and drinks (such as tea, coffee, cold drinks) provided free to the employees when they are on duty.
c. Uniforms and special clothing, if any, received free of cost by the employer.
d. The free services of vehicles (cars, scooters, vans etc.) provided by the employers to their employees.
e. Free provision of goods and services which are produced by the enterprises themselves. Free travelling by the staff of railways or airlines, free coal to the workers working in coal mines fall in this category.
f. Creches provided by the employers for the children of their employees.
g. Value of interest on the free-interest loans given by the employers to their employees or value of concessions in interest on loans given on concessional rates of interest by the employers to their employees.
h. Value of recreation and sports facilities provided by the employers to their employees and the members of their households.

Employers' contributions to social security schemes. Employers' contribution relating to the social security schemes of their employees such as life insurance, casualty insurance, contributory provident fund (CPF), pension schemes are also a part of the compensation to employees. In

addition to the above, in India's national income accounting, salaries and allowances paid to members of Parliament and State Legislatures, pay and allowances to the President of India, State Governors, ministers of Central and State Cabinets are also treated as compensation to employees

Precautions

While estimating national income through income method the following precautions should be taken:

i. Transfer payments are not included in estimating national income through this method.
ii. Imputed rent of self-occupied houses are included in national income as these houses provide services to those who occupy them and its value can be easily estimated from the market value data.
iii. Illegal money such as hawala money, money earned through smuggling etc. are not included as they cannot be easily estimated.
iv. Windfall gains such as prizes won, lotteries are also not included.
v. Corporate profit tax (that is, tax on income of the companies) should not be separately included as it has already been included as a part of profits.
vi. Death duties, gift tax, wealth tax, tax on lotteries, etc., are paid from past savings or wealth and not from current income. Therefore, they should not be treated as a part of national income of a year.
vii. The receipts from the sale of second-hand goods should not be treated as a part of national income. This is because the sale of second-hand goods does not create new flows of goods and services in the current year.
viii. Income equal to the value of production used for self-consumption should be estimated and included in the measure of national income.

Expenditure Method

Expenditure method arrives at national income by adding up all expenditures made on goods and services during a year. Income can be spent either on consumer goods or capital goods. Again, expenditure can be made by private individuals and households or by government and business enterprises. Further, people of foreign countries spend on the goods and services which a country exports to them. Similarly, people of a country spend on imports of goods and services from other countries. We add up the following types of expenditure by households, government and by productive enterprises to obtain national income:

Expenditure on consumer goods and services by individuals and households. This is called final private consumption expenditure, and is denoted by C.

Government's expenditure on goods and services to satisfy collective wants. This is called government's final consumption expenditure, and is denoted by G.

The expenditure by productive enterprises on capital goods and inventories or stocks. This is called gross domestic capital formation, or gross domestic investment and is denoted by I or GDCF. Gross domestic capital formation is divided into two parts:

(i) Gross fixed capital formation

(ii) Addition to the stocks or inventories of goods

The expenditure made by foreigners on goods and services of a country exported to other countries which are called exports and are denoted by X. We deduct from exports (X) the expenditure by people, enterprises and government of a country on imports (M) of goods and services from other countries. That is, we have to estimate net exports (that is, exports– imports) or (X—M). Thus, we add up the above four types of expenditure to get final expenditure on gross domestic product at market prices (GDP_{MP}). Thus,

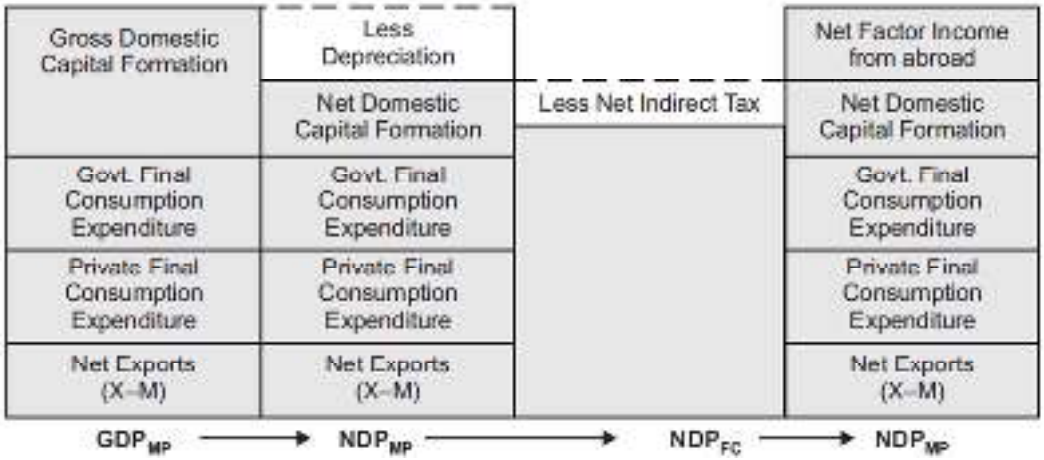
GDP_{MP} = Private final consumption expenditure + Government's final consumption expenditure + Gross domestic capital formation + Exports – Imports or

$GDP_{MP} = C + G + I + (X - M)$

= C + G + I + Xn

On deducting consumption of fixed capital (i.e., depreciation) from gross domestic product at market prices (GDP_{MP}) we get net domestic product at market prices (NDP_{MP}). In this method, we then subtract net indirect taxes (that is, indirect taxes – subsidies) to arrive at net domestic product at factor cost (NDP_{FC}). Lastly, we add 'net factor income from abroad' to obtain net national product at factor cost (NNP_{FC}), which is called national income. Thus,

NNP_{FC} = GDP_{MP} – Consumption of Fixed capital - Net Indirect taxes + Net Factor Income from Abroad.



Government's Final Consumption Expenditure on Goods and Services The general government provides services such as defence, law and order, public health, education, cultural services, etc., to satisfy collective wants of its citizens. The government purchases various goods and services from others for providing its services to the people and incurs cost on them.

This cost of goods and services purchased by the government to provide its services to the people to satisfy collective wants is called intermediate consumption. Further, the government employs several persons, such as soldiers, policemen, other official clerks, secretaries in various departments and pays them wages and salaries. Thus, compensation to employees (that is wages, salaries, etc.), both in cash and in kind, is another type of cost incurred by the Government. Since government generally does not sell its services and instead provides them free of cost or sells them at a price much lower than production cost, the value of services provided by the government are valued at their cost to the government. The cost is the sum of (1) expenditure on intermediate consumption incurred by Government and (2) compensation to employees (wages and salaries etc.).

However, the government also sells some goods and services, though at nominal prices, such as hospital fees, tuition fees charged from the students in Government institutions. In order to find out the cost of government services, proceeds from sales of some goods and services, if any, by the government must be deducted. Thus, the Government's final consumption expenditure on goods and services includes the following items:

1. Compensation to employees

2. Intermediate consumption expenditure by the General Government which refers to purchases of goods and services by the Government less sales of some goods by it.

3. Consumption of fixed capital.

Transfer Payments by the Government: Government expenditure on goods and services needs to be distinguished from transfer payments by the government. A good amount of Government expenditure is undertaken on making transfer payments which is not included in gross national product.

Notes: Main examples of transfer payments are social security benefits, unemployment allowance, old-age pensions, interest on public debt.

The reason for excluding them in estimation of national income is that in sharp contrast to Government purchases of goods and services, they are not paid in exchange for the contribution to

the current production of goods or rendering of any service by the recipients to the Government in the current year. In making transfer payments the Government just transfers a part of its revenue to specific individuals without any contribution by them to the current production of goods and services. To include these transfer payments in national income would amount to overestimate current year's production. Therefore, they are not included in national income of a year.

Precautions

While estimating Gross Domestic Product through expenditure method or measuring final expenditure on Gross National Product, the following precautions should be taken:

i. Second-hand goods: The expenditure made on second-hand goods should not be included because this does not contribute to the current year production of goods and services.
ii. Purchase of shares and bonds. Expenditure on purchase of old shares and bonds from other people and from business enterprises should not be included while estimating Gross Domestic Product through expenditure method. This is because bonds and shares are mere financial claims and do not represent expenditure on currently produced goods and services.
iii. Expenditure on transfer payments by government such as unemployment benefits, old-age pension should also not be included because no goods or productive services are produced in exchange by the recipients of these payments.
iv. Expenditure on intermediate goods such as fertilisers and seeds by the farmers and wool, cotton and yarn by manufacturers of garments should also be excluded. This is because we have to avoid double counting. Therefore, for estimating Gross Domestic Product we have to include only expenditure on final goods and services.

Limitations of Expenditure Method

1. Neglects Barter System
2. Ignores self consumption
3. Double counting of goods.

Uses of National Income Data

I. National income is the most dependable indicator of a country's economic health.
II. Difference between GDP and GNP indicates the contribution of net income earned abroad
III. Necessary for Economic planning: useful aid in judging which sectors should be given more emphasis
IV. Helps in comparing the situations of economic growth in two different countries.

Difficulties in the computation of National Income

1. No proper maintenance of books of accounts
2. Avoidance of double counting becomes complicated
3. Existence of Non-monetized sector is dominant
4. Maintaining absolute secrecy of the transactions

Significance Of National Income Accounting

The significance of national income accounting extends beyond measuring economic output and income. It serves as a vital tool for policymakers to formulate and evaluate economic policies. For example, by analyzing GDP growth rates, policymakers can assess the effectiveness of their policies in promoting economic expansion or combating recessions. They can also identify sectors that require support or structural reforms.

Summary

1. Saving and investment are fundamental components of a nation's economic activity, contributing to its long-term growth and stability. If a small open economy saves more than it invests, it generates a trade surplus, exporting capital to the rest of the world. This surplus can be invested abroad or held as foreign reserves. Conversely, if the economy invests more than it saves, it experiences a trade deficit and relies on borrowing from the rest of the world to finance the shortfall.
2. Exchange rates are a crucial aspect of the global economy, influencing international trade, investment flows, and financial transactions. Understanding the concepts of nominal exchange rates and real exchange rates, as well as the determinants of exchange rates, is essential for comprehending the dynamics of currency valuation and its impact on economic activity. The nominal exchange rate refers to the rate at which one currency can be exchanged for another currency. It represents the relative value of two currencies in the foreign exchange market.
3. National income is defined as the money value of all the final goods and services produced in an economy during an accounting period of time, generally one year. The methods which can be used to calculate national income is product method, income method and expenditure method.
4. In product method, the contribution of each enterprise to the generation of flow of goods and services is measured. Under this method, the economy is divided into different industrial sectors such as agriculture, fishing, mining, construction, manufacturing, trade and commerce, transport, communication and other services. Then, the net value added at factor cost (NVA_{FC}) by each productive enterprise as well as by each industry or sector is estimated.

Keywords

- GDP
- GNP
- National Income
- Nominal exchange rate
- Real exchange rate

Self Assessment

1. Why saving and investment is vital for the economy?

A. Capital formation
B. Productive capacity
C. Technological advancement
D. All of the above

2. Which factors can influence the saving and investment?

A. Interest rate
B. Disposable income
C. Tax rate
D. All of the above

3. Higher interest rate motivate the investors to
A. Invest more money
B. Save more money
C. Spend more money
D. None of the above

4. Higher tax rate
A. Adversely effect investment
B. Adversely effect savings
C. Has no impact on investment
D. None of the above

5. Excessive borrowing can lead to
A. Increase in foreign debt
B. Posing risks to financial stability
C. Both and b
D. None of the above

6. If the real exchange rate is high then
A. Country's goods and services will be relatively expensive
B. Country's goods and services will be cheaper
C. No impact on prices
D. None of the above

7. Which of the following factors can impact exchange rate?
A. Interest rate
B. Inflation rate
C. Government policies
D. All of the above
8. Value of services rendered by housewives is not to be included.
A. True
B. False

9. Which of the following are included while calculating the GDP of the country?
A. Consumption
B. Investment
C. Government expenditure
D. All of the above

10. Which difficulties are faced while calculating national income of the country?
A. Lack of maintenance of book of accounts
B. Dominance of non-monetary sector
C. Avoidance of double counting is becoming complicated
D. All of the above

11. Sum of all the factor incomes + NFIA=

A. National income
B. NNP_{FC}
C. GDP
D. Both a and b

12. Expenditure made on second hand goods should not be included while calculating national income.
A. True
B. False

13. Nominal exchange rate is
A. the rate at which one currency can be exchanged for another currency
B. zero
C. always declining
D. none of the above

14. National income is defined as the money value of all the final goods and services produced in an economy during an accounting period of time, generally one year.
A. True
B. False

15. By analyzing GDP growth rates, policymakers can assess the effectiveness of their policies in promoting economic expansion or combating recessions.
A. True
B. False

Answers for Self Assessment

1.	D	2.	D	3.	B	4.	A	5.	C
6.	A	7.	D	8.	A	9.	D	10.	D
11.	C	12.	A	13.	A	14.	A	15.	A

Review Questions

1. Critically examine the importance of savings and investment in small open economy.
2. Write a note on the difference between nominal and real exchange rate.
3. Explain the product method in detail with the help of example.
4. Make an assessment on income method.
5. Write a detailed note on expenditure method.

Further Reading

1. International Financial Management By Cheol S Eun And Bruce G Resnick, M.G. Hills
2. International Finance Management By Jeff Madura, Cengage Learning

Unit 08: Stock Market

CONTENTS

Objectives

After studying this unit the students will be able to

- Learn about portfolio Selection-Markowitz Approach
- Discuss about feasible and efficient set
- Learn about new portfolio theory-capital asset pricing model

Introduction

The stock market is a public marketplace where buyers and sellers of stocks (also called shares) of companies come together to trade. Stocks represent ownership claims on businesses. When you buy a stock, you are essentially buying a piece of the company. The stock market is a complex system that is influenced by a variety of factors, including economic conditions, interest rates, and investor sentiment. It can be volatile, meaning that prices can go up and down quickly. However, over the long term, the stock market has historically trended upwards.

8.1 Portfolio Selection-Markowitz Approach

The Markowitz model of selection mainly focuses on portfolio diversification. It separates stocks into high-risk and low-risk assets. The Harry Markowitz Model was introduced in 1952 through the journal of finance. Harry Markowitz won the Nobel prize for his contribution in 1990.

Portfolio: Suppose you want to invest an amount W0 in n securities (say). Let Wi be the proportion of W0 that you invest in the ith security. Then the n ordered n-tuple P=(w1, w2, ..., wn), this is called a portfolio of n securities and Wi is its ith portfolio value (or weight).

For example, P= (0, ½, 2/3) is a portfolio of three securities where no amount is invested in the first security, 1/3rd of the total funds are invested in the second and 2/3rd in the third security. By changing the value of Wi in P, subject to the conditions that the sum of portfolio is equal to one of all the given n securities that is a feasible set can be obtained.

Notes: The set of all the possible portfolios which can be constructed from a given set of securities is known as the feasible set or the opportunity set.

Optimal Portfolio: Given a portfolio P=(w1, w2, ..., wn) of n securities, our main purpose is to see the effect of portfolio values wi on the terminal value of the return on the portfolio P. But each wi

is a certain proportion of the initial funds that are invested in the ith security of the portfolio P. Thus, for quantifying the return and risk of the portfolio P, we have to calculate the return and risk of its constituting n securities. It is therefore, important to select the proportions wi of the initial funds in such a way that the portfolio P is optimally good according to the investment objectives. Such a portfolio which provides an investor the maximum level of satisfaction is called an Optimal Portfolio. Markowitz's approach to portfolio selection begins by assuming that an investor has a given sum of money to invest at the present time. This money will be invested for a particular length of time, known as the investor's holding period. Markowitz's approach is a single period approach where at the beginning of the period say t = 0, the investor must make decision on what particular securities to purchase and hold until the end of the period say t = 1.

Markowitz Model

Since a portfolio is a collection of securities, this decision is equivalent to selecting an optimal portfolio from a set of possible portfolios. Typically, it is seen that an investor wants the returns to be high as well as, as certain as possible. The investor, looking forward to maximize expected return and minimize risk has two conflicting objectives that must be balanced against each other when making the purchase decision at t = 0. The Markowitz approach for how the investor should go about making this decision gives full consideration to both these objectives. He used certain concepts from probability theory to solve this problem. According to Markowitz, the investor should view the rate of return associated with any of these portfolios to be what is known in statistics as a random variable. Expected rate of return can be viewed as a measure of the potential reward associated with any portfolio and standard deviations can be viewed as a measure of risk associated with any portfolio.

Assumptions of Model

- Markowitz model is based on the following assumptions:
- Investor invest money for a particular length of time, called the holding period.
- Investors are rational and behave in a manner as to maximize their utility with a given level of income or money.
- Investors are risk averse and try to minimize the risk and maximize return.
- Investors prefer higher returns to lower returns for a given level of risk.
- The evaluation of portfolios is carried out in terms of returns and the risk associated with the constituting securities, over a given holding period.
- Diversification is important. But the theory assumes diversification is the only way to minimize investment risks.

Markowitz Model Formula

The Markowitz is as follows:

RP = IRF + (RM – IRF)σP /σM Here,

RP = Expected Portfolio Return

RM = Market Portfolio Return

IRF = Risk-free Rate of Interest

σM = Market's Standard Deviation

σP = Standard Deviation of Portfolio

Advantages and Disadvantages

The advantages are as follows:

1. The portfolio becomes resistant to systematic risk

2. Diversification helps investors understand different sectors.
3. Such portfolios suit both long-term wealth creation and short-term profits.
4. A variety of financial instruments fit this investment strategy.

The disadvantages are as follows:

This approach is often called Markowitz Mean Variance Model.

1. It is more inclined towards variance and tends to overlook potential risks.
2. It does not guarantee good returns and is only based on historical data.
3. The model does not account for associated costs like broker commissions, taxes, and other charges.

8.2 Feasible and Efficient Set

Portfolio Analysis is the process of reviewing or assessing the elements of the entire portfolio of securities or products in a business. The review is done for careful analysis of risk and return. Portfolio analysis conducted at regular intervals helps the investor to make changes in the portfolio allocation and change them according to the changing market and different circumstances. The analysis also helps in proper resource / asset allocation to different elements in the portfolio. Portfolio Management is the art and science of making decisions about investment mix and policy, matching investments to objectives, asset allocation for individuals and institutions, and balancing risk against performance. The art of selecting the right investment policy for the individuals in terms of minimum risk and maximum return is called as portfolio management. Portfolio is the combination of assets. It refers to a collection of investment tools such as stocks, shares, mutual funds, bonds, and cash and so on depending on the investor's income, budget and convenient time frame.

Types of Portfolio : There are two types of portfolio –

1. Market Portfolio : The market portfolio is a theoretical bundle of investments that includes every type of asset available in the investment universe, with each asset weighted in proportion to its total presence in the market. The expected return of a market portfolio is identical to the expected return of the market as whole.
2. Zero Investment Portfolios : A portfolio of assets formed where the group of investments collectively forms a zero net value. Such investment portfolios can be achieved by simultaneously purchasing securities and selling equivalent securities resulting to a net zero.

Elements of Portfolio Management:

Proper Asset Allocation: The key to effective portfolio management is the long-term mix of assets. Asset allocation is based on the understanding that different types of assets do not move in concert, and some are more volatile than others. Asset allocation seeks to optimize the risk/return profile of an investor by investing in a mix of assets that have low correlation to each other.

Diversification is the spreading of risk and reward within an asset class. Because it is difficult to know which particular subset of an asset class or sector is likely to outperform another, diversification seeks to capture the returns of all of the sectors over time but with less volatility at any one time. Proper diversification takes place across different classes of securities, sectors of the economy and geographical regions.

Rebalancing and Restructuring: It is used to return a portfolio to its original target allocation at annual intervals. It is important for retaining the asset mix that best reflects an investor's risk/return profile. Otherwise, the movements of the markets could expose the portfolio to greater risk or reduced return opportunities.

Portfolio Selection: Portfolio Selection is the process of finding out the optimal portfolio which would be one generating highest return with the lowest risk. This is done with the objective of maximizing the investor's return.

Diversification is done for reducing the risk in a portfolio. The investor usually combines a limited number of securities thereby creating a large number of portfolios and in different proportions. This is known as portfolio opportunity set.

Every portfolio in the opportunity set is characterized by an expected return and some risk in terms of variance or standard deviation. Some portfolios in a portfolio opportunity set are of interest to an investor depending upon the risk and return as measured by standard deviation. A portfolio will dominate over others if it has a lower standard deviation. These portfolios which are dominated by other portfolios are known as inefficient portfolios. Efficient portfolios are the ones in which the investor is interested to invest.

Feasible Portfolio: A portfolio that can be constructed using the given assets and satisfies the risk and return appetite of the investor at his/her best.

Strong consideration of investor's capital resources, risk tolerance and investment objectives. Each feasible portfolio has its own risk and reward profile, and is not necessarily an efficient portfolio. An investor can choose between multiple feasible portfolios. Risk – Return balance and allocation of funds are the most important activities in managing a feasible portfolio The efficient frontier, also known as the portfolio frontier, is a set of ideal or optimal portfolios expected to give the highest return for a minimal return. It manifests the risk-and return trade-off of a portfolio. This frontier is formed by plotting the expected return on the y-axis and the standard deviation as a measure of risk on the x-axis. For building the frontier, there are three important factors to be taken into consideration:

Expected return, Variance/ Standard Deviation as a measure of the variability of returns, also known as risk and the covariance of one asset's return to that of another asset. The American Economist Harry Markowitz established this model in 1952. After that, he spent a few years researching the same, eventually winning the Nobel Prize in 1990. Let us understand the construction of the efficient frontier with the help of a numerical example: Assume two assets, A1 and A2, are in a particular portfolio. Calculate the risks and returns for the two assets whose expected return and standard deviation are as follows:

Particulars	A1	A2
Expected Return	10%	20%
Standard Deviation	15%	30%
Correlation Coefficient	-0.09	-

Let us now give weights to the assets, i.e., a few portfolio possibilities of investing in such assets as given below:

Portfolio	Weight in %	
A1	A2	
1	100	0
2	75	25
3	50	50
4	25	75
5	0	100

Using the formula for Expected Return and Portfolio Risk i.e.

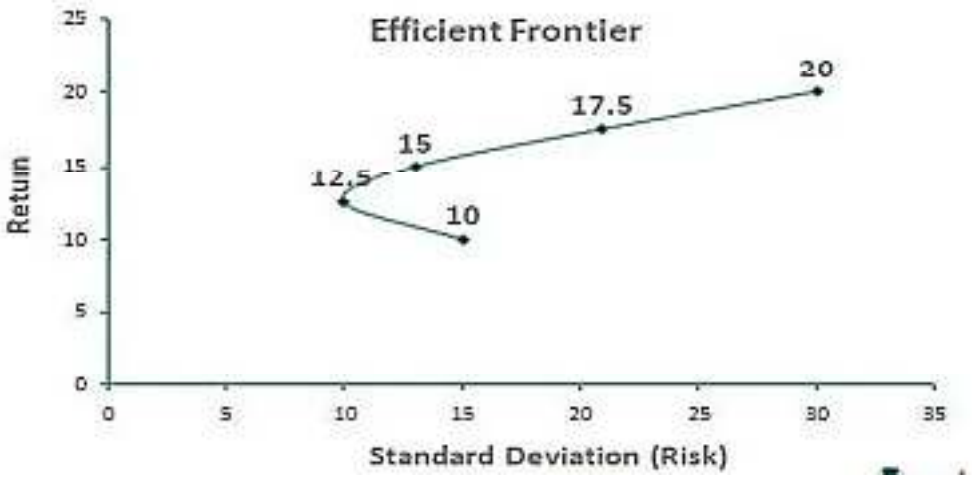
Expected Return = (Weight of A1 * Return of A1) + (Weight of A2 * Return of A2)

Portfolio Risk = √ [(Weight of A12 * Standard Deviation of A12) + (Weight of A22 * Standard Deviation of A22) + (2 X Correlation Coefficient * Standard Deviation of A1 * Standard Deviation of A2)],

We can arrive at the portfolio risks and returns as below.

Portfolio	Risk	Return
1	15	10
2	9.92	12.5
3	12.99	15
4	20.88	17.5
5	30	20

Using the table, if we plot the risk on the X-axis and the Return on Y-axis, we get a graph that looks as follows and is called the efficient frontier, sometimes referred to as the Markowitz bullet.



In this illustration, we have assumed that the portfolio consists of only two assets A1 and A2, for simplicity and easy understanding. We can, in a similar fashion, construct a portfolio for multiple assets and plot it to attain the frontier. In the above graph, any points outside the frontier are inferior to the portfolio on the efficient frontier because they offer the same return with higher risk or lesser return with the same amount of risk as those on the frontier. From a graphical representation of the efficient frontier, we can arrive at two logical conclusions: It is where the optimal portfolio are. The efficient frontier is not a straight line. It is curved. It is concave to the Y-axis.

Assumptions of the Efficient Frontier Model

- Investors are rational and know all the facts about the markets. This assumption implies that all the investors are vigilant enough to understand the stock movements, predict returns, and invest accordingly. That also means that this model assumes all investors are on the same page regarding knowledge of the markets.
- All investors have a common goal: avoid the risk because they are risk-averse and maximize the return as far as possible and practicable. There are not many investors who would affect the market price.
- Investors have unlimited borrowing power.
- Investors lend and borrow money at a risk-free interest rate.
- The markets are efficient.
- The assets follow a normal distribution.
- Markets absorb information quickly and accordingly base the actions.
- The investors' decisions are always based on expected return and standard deviation as a measure of risk.

Drawbacks/Demerits

The assumption that all investors are rational and make sound investment decisions may not always be true because not all investors would have enough knowledge about the markets. The theory can be applied, or the frontier can be constructed only when a concept of diversification is involved. If there is no diversification, the theory would certainly fail. Also, the assumption that investors have unlimited borrowing and lending capacity is faulty. The assumption that the assets follow a normal distribution pattern might not always stand true. In reality, securities may have to experience returns far from the respective standard deviations, sometimes like three standard deviations away from the mean. The real costs, like taxes, brokerage, fees, etc., are not considered while constructing the frontier. To sum up, the efficient frontier displays a combination of assets with the optimal expected return level for a given level of risk. It depends on the past and keeps changing every year; there is new data. After all, the past figures need not necessarily continue in the future. All the portfolios on the line are 'efficient,' and the assets that fall outside the line are not optimal because either they offer a lower return for the same risk or riskier for the same level of return. Although the model has its demerits, like the non-viable assumptions, it has been earmarked to be revolutionary when it was first introduced.

Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) measures the relationship between the expected return and the risk of investing in security. This model is used to analyze securities and price them given the expected rate of return and cost of capital involved. The Capital Asset Pricing Model, derived by Sharpe, Lintner, and Mossin, stipulates assumptions regarding the market and how investors behave to enable the creation of an equilibrium model of prices in the whole market.

 **Notes:** CAPM explains that the market equilibrium is attained when all investors hold portfolios whose constituents are a combination of riskless assets and the market portfolio.

Assumptions Underlying the CAPM

Assumptions of the CAPM model include:

- There are no transaction costs
- There are no taxes
- Assets are infinitely divisible
- Unlimited short-selling is permissible
- All assets are marketable/liquid
- Investors are price takers whose individual buy and sell transactions do not affect the price.
- Investors' utility functions are based solely on expected portfolio return and risk
- The only concern among investors are risk and return over a single period, and the single period is the same for all investors.

Under these assumptions, the expected rate of return over a given holding time is given by:

$E(Ri) = Rf+\beta i(Rm-Rf)$

Where

E(Ri) : the expected return of asset i over the holding period

Rf: rate of return on the risk-free asset.

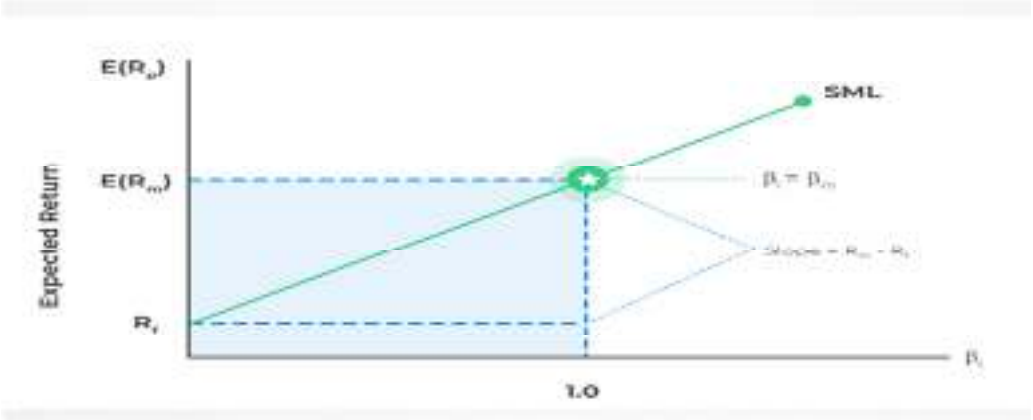
Rm: Expected market return over the holding period

βi: the Beta factor of the asset i.

Note that: (Rm−Rf)is the expected return per unit risk (beta) and βi(Rm−Rf) is the expected return above the risk-free rate of return.

Interpreting Beta

Beta is a measure of the systematic risk associated with a particular stock, asset, or portfolio. Systematic risk is the portion of risk that cannot be eliminated by any amount of diversification.



A value of beta above 1 indicates a stock/asset/portfolio that has, historically, amplified the return of the whole market (positive or negative). A beta close to zero would indicate a stock/asset/portfolio that provides a more stable return than the market as a whole. A negative beta would signify a stock/asset/portfolio whose performance is counter-cyclical, i.e., offsets the overall market experience.

Derivation of CAPM

The derivation of CAPM involves three major steps:

Recognize that investors are only compensated for bearing systematic risk, not specific risks that can easily be diversified away. Note that, beta is an appropriate measure of systematic risk. Suppose we recognize that portfolio expected return is a weighted average of individual expected returns and portfolio beta is a weighted average of the individual betas. In that case, we can show that portfolio return is a linear function of portfolio beta. And because arbitrage prevents mispricing of assets relative to systematic risk, then an individual asset's expected return is a linear function of its beta. We can then use the risk-free asset and the market portfolio to solve for the intercept and slope of the CAPM.

$$E(Ri) = Rf+\beta i(Rm-Rf)$$

Advantages of CAPM

- CAPM considers only the systematic or market risk or not the security's only inherent or systematic risk. This factor eliminates the vagueness associated with an individual security's risk, and only the general market risk, which has a degree of certainty, becomes the primary factor.
- The model assumes that the investor holds a diversified portfolio, and hence unsystematic risk is eliminated between the stock holdings.
- It is widely used in the finance industry to calculate the cost of equity and ultimately the weighted average cost of capital, which is used extensively to check the cost of financing from various sources.
- It is a universal and easy-to-use model.
- Given the extensive presence of this model, this can easily be utilized for comparisons between stocks of various countries.

Disadvantages of CAPM

The capital asset pricing model is hinged on various assumptions. One of the assumptions is that a riskier asset will yield a higher return. Next, the historical data is used to calculate Beta. The model also assumes that past performance is a good measure of the future results of a stock's functioning. However, that is far from the truth. The model also assumes that the risk-free return will remain constant throughout the stock investment. The model assumes that the investors have access to the same information and have the same decision-making process concerning the risks and returns associated with the securities. It assumes that the investors will prefer low-risk securities to high-risk securities for a given return. Investors will prefer higher returns to lower returns for a given risk. Although this is a general guideline, some of the more extravagant investors might not be in agreement with this theory.

Limitations of the Capital Asset Pricing Model

Apart from the assumptions directly related to the factors around the stock and the capital asset pricing model calculation formula, there is a list of general assumptions that the model takes, which are worth looking into. Only the returns and risks involved in the securities are the decision-making factors for an investor. There is no accountability for the long-term growth or qualitative factors around a stock that could influence the investor to take an alternative step. There is perfect competition in the market, and no single investor can influence a stock's prices or returns. There is no limit on the short-selling of a stock; neither is their control on the divisibility of the purchase and selling units. There are nil taxes regarding the returns earned or any borrowing costs concerning the amount utilized to earn interest on the investment. Finally, the model assumes that the investor is risk averse and he is supposed to act as a rational being and maximize his utility.

Notes: CAPM is widely regarded as one of the foremost models for calculating the risk and returns associated with investing in stocks. Although it utilizes a few assumptions, the rationale behind the model and the ease of use makes it one of the accepted and logical ways to help investors in their decision-making.

Summary

1. The set of all the possible portfolios which can be constructed from a given set of securities is known as the feasible set or the opportunity set.
2. A portfolio is a collection of securities, this decision is equivalent to selecting an optimal portfolio from a set of possible portfolios. Typically, it is seen that an investor wants the returns to be high as well as, as certain as possible. The investor, looking forward to maximize expected return and minimize risk.
3. Portfolio Analysis is the process of reviewing or assessing the elements of the entire portfolio of securities or products in a business. The review is done for careful analysis of risk and return.
4. Portfolio analysis conducted at regular intervals helps the investor to make changes in the portfolio allocation and change them according to the changing market and different circumstances. The analysis also helps in proper resource/ asset allocation to different elements in the portfolio. Portfolio Management is the art and science of making decisions about investment mix and policy, matching investments to objectives, asset allocation for individuals and institutions, and balancing risk against performance.
5. The Capital Asset Pricing Model (CAPM) measures the relationship between the expected return and the risk of investing in security. This model is used to analyze securities and price them given the expected rate of return and cost of capital involved.

Keywords

- Capital asset pricing model
- Portfolio
- Diversification
- Feasible set
- Opportunity set
- Systematic risk

Self Assessment

1. Markowitz model of selection mainly focuses on

A. Portfolio diversification
B. Loans
C. Poverty
D. None of the above

2. Markowitz model of selection separates stocks into

A. High-risk assets
B. Low-risk assets
C. Both a and b
D. None of the above

3. Which of the following are assumptions of Markowitz Model?

A. Investor invest money for a particular length of time

B. Investors are rational and behave in a manner as to maximize their utility with a given level of income or money.
C. Investors are risk averse and try to minimize the risk and maximize return.
D. All of the above

4. Which of the following are advantages of Markowitz Model?
A. The portfolio becomes resistant to systematic risk
B. Diversification helps investors understand different sectors.
C. Such portfolios suit both long-term wealth creation and short-term profits.
D. All of the above

5. Which of the following are disadvantages of Markowitz model?
A. It is more inclined towards variance and tends to overlook potential risks.
B. The model does not account for associated costs like broker commissions, taxes, and other charges.
C. Both a and b
D. None of the above

6. Which of the following are types of portfolio?
A. Market portfolio
B. Zero investment portfolio
C. Both a and b
D. None of the above

7. Group of investments collectively forms a zero net value is known as
A. Zero investment portfolio
B. Market portfolio
C. Investment
D. None of the above

8. Diversification is done for reducing the risk in a portfolio.
A. True
B. False

9. Which of the following are elements of portfolio management?
A. Proper allocation
B. Diversification
C. Both a and b
D. None of the above

10. Which of the following are assumptions of efficient frontier model?
A. All investors are rational
B. All investors have common goal
C. The markets are efficient
D. All of the above

11. Capital assets price model measure the relationship between
A. expected return and the risk of investing in security
B. demand and supply
C. supply and price
D. none of the above

12. Which of the following are advantages of CAPM?
A. This is universal
B. This is easy to use model
C. This can easily be utilized for comparisons between stocks of various countries
D. All of the above

13. Which of the following are disadvantages of CAPM?
A. There are no nil taxes
B. This model assumes perfect competition
C. Both a and b
D. None of the above

14. Which of the following are assumptions of CAPM?
A. There are no transaction costs
B. There are no taxes
C. Assets are infinitely divisible
D. All of the above

15. CAPM explains that the market equilibrium is attained when all investors hold portfolios whose constituents are a combination of riskless assets and the market portfolio.
A. True
B. False

Answers for Self Assessment

1.	A	2.	C	3.	D	4.	D	5.	C
6.	C	7.	A	8.	A	9.	C	10.	D
11.	A	12.	D	13.	C	14.	D	15.	A

Review Questions

1. Critically examine capital asset price model.
2. Write a detailed note on advantages and limitations of capital asset price model.
3. Critically examine Markowitz Model.
4. What are different elements of portfolio management. Explain in detail.
5. Critically examine efficiency frontier model.

Further Reading

1. International Financial Management By Cheol S Eun And Bruce G Resnick, M.G. Hills
2. International Finance Management By Jeff Madura, Cengage Learning

Unit 09: Issues in Stock Market

CONTENTS

Objectives

After studying this unit the students will be able to

- Discuss about arbitrage pricing theory
- Learn about consumption capital asset pricing model
- Learn about equity premium puzzle

Introduction

The stock market is a complex and ever-changing system, and there are many issues that can affect its performance. Some of the most common issues include:

Economic factors: The stock market is closely linked to the overall economy, so any economic downturn can lead to a decline in stock prices. This is because businesses tend to perform worse during economic downturns, which can lead to lower profits and stock prices.

Political factors: Political instability can also have a negative impact on the stock market. This is because investors may become uncertain about the future of the economy and businesses, which can lead to selling pressure.

Geopolitical events: Geopolitical events, such as wars or terrorist attacks, can also cause stock prices to fall. This is because investors may become concerned about the stability of the global economy, which can lead to a decline in demand for stocks.

Interest rates: Interest rates are the cost of borrowing money, and they can have a significant impact on the stock market. When interest rates rise, it becomes more expensive for businesses to borrow money, which can lead to lower profits and stock prices.

Technological changes: Technological changes can also disrupt the stock market. This is because new technologies can make existing businesses obsolete, which can lead to lower profits and stock prices.

Speculation: Speculation is the act of buying or selling assets with the hope of making a profit from short-term price movements. Speculation can lead to volatility in the stock market, as investors may buy and sell stocks in large volumes in order to profit from small price changes.

Fraud: Fraud is the intentional deception of others in order to gain something, such as money or property. Fraud can occur in the stock market in a number of ways, such as through insider trading or pump-and-dump schemes.

These are just some of the issues that can affect the stock market. It is important for investors to be aware of these issues and to understand how they can impact their investments.

In addition to the above, here are some other specific issues that have been affecting the stock market recently:

The ongoing war in Ukraine: The war in Ukraine has caused a great deal of uncertainty in the global economy, which has led to volatility in the stock market. Investors are concerned about the impact of the war on energy prices, commodity prices, and global supply chains.

Rising inflation: Inflation is rising at its fastest pace in decades, and this is putting pressure on businesses and consumers. Higher inflation can lead to lower profits for businesses, which can in turn lead to lower stock prices.

The Federal Reserve's interest rate hikes: The Federal Reserve is raising interest rates in an effort to combat inflation. This is likely to lead to higher borrowing costs for businesses and consumers, which could also put pressure on stock prices.

It is important to remember that the stock market is a long-term investment, and short-term fluctuations should not be a cause for alarm. However, investors should be aware of the risks involved and should take steps to mitigate those risks.

9.1 Arbitrage Pricing Theory

The arbitrage pricing theory model helps exploit the short-term profit opportunities presented by the misaligned prices of securities. Individual investors and institutions alike can use the arbitrage pricing theory to determine the fair value of a particular financial asset, including:

1. Stocks
2. Bonds
3. Derivatives
4. Commodities

To understand arbitrage pricing theory, let us first take a look at the term arbitrage. In finance, arbitrage refers to the act of finding discrepancies in the value of an asset through two different markets and taking advantage of the price difference. The arbitrage pricing theory was first developed in 1976 by former Wharton School of Business professor and economist Stephen Ross. He developed the concept as an alternative to the Capital Asset Pricing Model. Ross built upon his predecessors' ideas and knowledge to build a model that considers multiple components of risk that can be used to explain the co-movements among stocks. According to the theory, risk components generate all the co-movements among the assets. Any slight differences can be attributed to the individual securities and not the system as a whole. Arbitrage Pricing Theory (APT) is used to assess and anticipate the returns of assets and portfolios.

APT is a model that shows the relationship between an asset's expected risk and the return. The APT model shows how the changes in macroeconomic factors affect an asset's returns. These variables are inflation, interest rates, exchange rates, etc. APT is an alternative model to the Capital Asset Pricing Model (CAPM). Although, both theories represent the relationship between risk and expected risk, the arbitrage pricing theory is harder to gauge and implement

Did you know?

What is arbitrage?

Arbitrage is the process of buying an asset at a lower price and then selling it at a higher price.

In theory, arbitrage offers the investors a high chance of success.

Elements of risk

For investors, the more critical risk factor will be the asset's sensitivity or exposure to risk components. The elements of risk can include:

1. Changes in inflation
2. Gross Domestic Product (GDP)
3. Changes in interest rates
4. Market sentiments
5. Exchange rates

The model was designed to calculate the fair value of an asset, and if the actual value is different, it can be considered either overvalued or undervalued.

 For example, suppose the arbitrage pricing model estimates the value of Apple's stock to be $200. But the actual price is $210, and therefore, the stock would be considered overvalued.

According to the APT theory, it should correct itself, presenting an arbitrage opportunity.

Arbitrage pricing theory formula

The formula for APT is as follows.

$E(x) = Rf + \beta 1 *(\text{factor } 1) + \beta 2 *(\text{factor } 2) + \ldots + \beta n *(\text{factor } n)$

where,

E(x) = the expected return of an asset

Rf = the expected return assuming zero systematic risk or market risk

β = the sensitivity the asset has to the risk factor (beta)

n factor = risk premium.

What impacts the Arbitrage Pricing Theory?

The return on assets is determined by systematic factors such as changes in inflation, risk premiums, interest rates, etc. Investors construct portfolios with unsystematic risks, which are well-diversified to reduce total portfolio risk. There is no opportunity for arbitrage with the diversification of portfolios. Investors use arbitrage by understanding the differences between the expected and real returns. If the opportunity exists, it would be exploited away by the investors.

Assumptions of Arbitrage pricing theory

The arbitrage pricing theory model is based on the following three assumptions:

1. First, participants in a capital market execute trades to maximize profit.
2. Second, the capital market is perfectly competitive and frictionless (free access to the markets, freely available information, and abundant traders.)
3. Third, there are no arbitrage cases, and if one presents itself, investors will take advantage of it.

Arbitrage pricing theory vs. capital asset pricing model (CAPM)

The two theories are very different in their approaches and assumptions regarding capital markets. Here is how they differ from one another.

1. Factors Considered – The APT considers multiple macroeconomic risk factors. In contrast, the CAPM uses only one factor, i.e., expected market return
2. Accuracy – Since the APT is based on multiple factors, it is typically considered a more accurate model. However, the APT doesn't specify which factors are used, and hence one will have to establish which element should be used for a particular asset. This can determine how accurate the model is.
3. Asset Relationship – Both the APT and CAPM models assume assets have a linear relationship or that assets move in relation to one another.

Assumptions – Both models assume that assets have unlimited demand and that investors have the same access to information, which may not always be true.

Market portfolio- CAPM requires an efficient market portfolio and assumes that the returns are normally distributed. But APT makes no such assumption and does not require an efficient portfolio.

Notes: The arbitrage pricing theory model holds the expected return of a financial asset as a linear relationship with various macroeconomic indices to estimate the asset price. A beta coefficient represents the change in sensitivity of the price to each factor. One can then leverage the arbitrage to make short-term profits that are free of risks.

9.2 Consumption-Based Capital Asset Pricing Model (CCAPM)

The Consumption-Based Capital Asset Pricing Model (CCAPM) is an economic framework that explains the relationship between asset prices and the consumption decisions of investors. It is an extension of the traditional Capital Asset Pricing Model. It aims to analyze asset pricing and the behaviour of financial markets by providing insights into the relationship between consumption decisions and asset prices. The CCAPM suggests that asset prices are determined by the trade-off between their current consumption and future consumption. According to this model, investors are concerned about an asset's expected return and risk. Moreover, they care about how it affects their consumption patterns over time. Furthermore, the CCAPM assumes investors are risk-averse and prefer smoothing their consumption over time. The model assumes that investors are risk-averse and prefer smoothing their consumption over time. Additionally, it assumes that investors are concerned about the utility they derive from consumption. Moreover, they are willing to take more risks to maximize their well-being. Furthermore, this model recognizes that the risk premium of an asset is directly related to the covariance between the asset's return and the investor's marginal utility of consumption.

Consumption-Based Capital Asset Pricing Model Equation

$$R = R_f + \beta_c (R_m - R_f)$$

Where:

R = Expected return on a security

R_f = Risk-free rate

β_c = Consumption beta

R_m = Return on the market

Importance of Model

The CCAPM importance is as follows:

1. The CCAPM recognizes that investors give importance to the timing and smoothness of their consumption over time. Thus, it provides a more realistic and comprehensive framework for understanding investor behavioural patterns.
2. The model helps provide insights into why investors demand higher expected returns for assets negatively correlated with their consumption utility by considering the relationship between consumption and asset prices.

3. This model offers valuable insights into the determinants of asset prices. However, it suggests that the risk premium of an asset is related to the covariance between its return and the investor's marginal utility of consumption.
4. The CCAPM identifies that the investors are risk-averse and prefer to smooth their consumption over time. Moreover, by incorporating these factors, the model offers a setting to evaluate how asset price and risk changes impact investors' consumption decisions.
5. It explains how investors allocate their wealth between different assets based on consumption patterns and risk appetite preferences.
6. The model guides investment decision-making. Additionally, investors can make more informed choices about portfolio allocation by considering the relationship between consumption and asset prices.
7. Furthermore, the application of the consumption-based capital asset pricing model assists in determining the appropriate risk premiums required for assets based on their correlation with investors' consumption utility.

Criticism of CCAPM

1. The application of the consumption-based capital asset pricing model requires estimating various parameters and variables, including consumption growth rates, risk-free rates, and covariance between asset returns and consumption. However, performing these estimations can be complex and subject to data limitations, resulting in potential inaccuracies in the model's predictions.
2. The model relies on assumptions like constant relative risk aversion and a perfect capital market. However, these assumptions may oversimplify the complexities of the actual financial market and investor behaviour patterns.
3. Moreover, its predictions may not accommodate more realistic settings where investors exhibit time-varying risk aversion or face constraints on borrowing and lending.
4. The CCAPM's ability to explain the cross-section of asset returns, especially the variation in expected returns across different assets, is criticized.
5. Additionally, the model may not efficiently account for factors beyond consumption patterns that drive asset prices, including market sentiment, liquidity considerations, or investor sentiment.
6. This model's predictions can be sensitive to the values assigned to several parameters, like risk aversion. Moreover, small changes in these parameter values can significantly affect the model's outcomes and raise concerns about its robustness and dependability.
7. The CCAPM is one of several asset pricing models with no consensus on its superiority over alternative models. Since different models offer alternative explanations for asset pricing phenomena, the CCAPM's limitations may refrain investors from using this model.

CCAPM vs Capital Asset Pricing Model

CCAPM: This model considers investors and identifies that they care about their consumption's timing and smoothness over time. The investors account for these preferences. A relation between their current and future consumption can be established in determining asset prices. The CCAPM incorporates consumption risk as it suggests that the risk premium of an asset is related to the covariance between its return and the investor's marginal utility of consumption. This model offers insights into why investors demand higher expected returns from assets negatively correlated with their consumption utility by considering the relationship between consumption and asset prices.

Capital Asset Pricing Model (CAPM): CAPM assumes that the risk and return of an asset are determined only by its systematic risk, represented by beta. It suggests that investors are only concerned with the covariance between an asset and the market return, and risk premiums are based on this relationship. The model assumes that all investors, including all risky investments, hold the market portfolio. It suggests that an asset's risk and return are determined by its sensitivity to market movements instead of its specific characteristics. The CAPM is widely accepted and practiced due to its simplicity and ease of application. It provides a simplified framework for estimating the expected return on an asset based on its beta and the market risk premium.


The CCAPM provides a framework for pricing financial assets based on the interplay between an investor's consumption decisions and expected returns. It suggests that the equilibrium asset prices are determined by the investor's preferences, risk aversion, and expectations about future consumption growth. By incorporating consumption dynamics, the CCAPM offers a more comprehensive view of asset pricing compared to traditional models like the CAPM.

9.3 Equity Risk Premium Puzzle

The equity risk premium puzzle is one of the classic puzzles in finance.

Mehra and Prescott (1985) find that historical average returns on equity on the US stock market from 1889 to 1978 (90 years) far exceeded the average returns of short-term debt, corresponding to basically riskless assets. While the difference would be a natural consequence of risk aversion, the authors find that the sheer size of this difference could be explained only by a much higher level of risk aversion than what is usually measured in decision experiments. Initially, Mehra and Prescott (1985) defined the puzzle as the incapacity of the traditional consumption asset pricing model (CCAPM) based on Lucas Jr (1978)'s pure exchange model to capture the equity premium from US data from 1889 to 1978. Assuming no transaction cost and efficient markets, rational investors price assets based on the equilibrium in which the utility of consumption being sacrificed at time zero matches the expected utility gain from the investment in the future.

The Equity Premium Puzzle refers to a long-standing empirical observation in finance that suggests that the expected returns on stocks (equities) are higher than what can be justified by traditional economic models. The puzzle arises from the fact that, historically, stocks have provided higher average returns compared to relatively safer assets, such as government bonds, despite being riskier investments. According to traditional financial theory, investors require a higher return for taking on additional risk. This is known as the risk premium.

However, when economists and researchers have attempted to estimate the magnitude of the risk premium, they have found that the observed equity premium (the difference between stock returns and risk-free rates) is significantly higher than what would be expected based on standard risk-based models. The existence of the Equity Premium Puzzle challenges the traditional understanding of asset pricing and has led to extensive research and debate among economists and finance scholars. Various explanations and theories have been proposed to reconcile the puzzle including:

1. Time-Varying Risk Aversion: Some researchers argue that investors' level of risk aversion varies over time. During periods of economic uncertainty or market downturns, investors become more risk-averse and demand higher returns on stocks. This increased risk aversion could explain the higher observed equity premium.
2. Non-Tradable Risks: Traditional economic models typically consider only tradable risks that can be diversified away. However, some researchers suggest that there may be non-tradable risks that investors face, such as labor income risk or housing market risk. These non-tradable risks could contribute to the equity premium.
3. Behavioral Factors: Behavioural finance theories propose that investor psychology and irrational behaviour may play a role in the equity premium puzzle. Factors such as overconfidence, loss aversion, or herding behaviour could lead to mispricing of stocks, resulting in higher returns than predicted by rational models.
4. Limited Participation: This theory suggests that the equity premium may arise from a limited number of investors participating in the stock market. If only a small fraction of

the population invests in stocks, they may require a higher expected return to compensate for the risk they perceive.

5. Rare Disaster Risk: Another explanation involves the consideration of extremely rare events with catastrophic consequences, such as global pandemics or financial crises. If investors assign a non-negligible probability to such events, they may demand a higher equity premium to compensate for the potential losses.
6. Puzzle Follow-on studies: Siegel (1991, 1992) – Extends the period back to 1802. Over 1802-1870, 1871- 1925, and 1926- 1990, real compound equity returns were 5.7, 6.6, and 6.4 percent, respectively. However, returns on short-term government bonds have fallen dramatically, the figures for the same three time periods being 5.1, 3.1, and 0.5 percent. Thus, there was no equity premium in the first two-thirds of the nineteenth century (because bond returns were high), but over the last 120 years, stocks have had a significant edge.

Three important points by Mehra (2011) on the Puzzle:

The risk-free asset for a typical investor is not T-bills: if one uses longer-term maturity Treasury securities such as TIPS or mortgage-backed securities backed by housing agencies (GNMA, etc.) the premium narrows by roughly 2 percent!

The marginal investor is likely to be a borrower, not a lender: Think of a household with a mortgage balance. Its opportunity cost when judging investing a marginal dollar of savings into stocks is the rate on its mortgage loan, which is on average 2% higher than the lending rate that the household is faced with. So points 1 and 2 combined narrow the equity premium by close to 4%!

The premium should depend on the life cycle stage of the marginal investor: Young people looking forward at the start of their lives have uncertain future wage and equity income; furthermore, the correlation of equity income with consumption will not be particularly high as long as stock and wage income are not highly correlated. This is empirically the case, as documented by Davis and Willen (2000). Equity will, therefore, be a hedge against fluctuations in wages and a "desirable" asset to hold as far as the young are concerned. For the middle-aged, wage uncertainty has largely been resolved. Their future retirement wage income is either zero or deterministic, and the innovations (fluctuations) in their consumption occur from fluctuations in equity income. At this stage of the life cycle, equity income is highly correlated with consumption. Consumption is high when equity income is high, and equity is no longer a hedge against fluctuations in consumption; hence, for this group, equity requires a higher rate of return. The characteristics of equity as an asset, therefore, change depending on the predominant holder of the equity. Life-cycle considerations thus become crucial for asset pricing. If equity is a desirable asset for the marginal investor in the economy, then the observed equity premium will be low relative to an economy where the marginal investor finds it unattractive to hold equity. If young people, who should find equity attractive, are subject to constraints on borrowing against their future wage income, then the marginal investor in equity is likely to be the older investors who will demand a higher premium from equity.

Conclusion:

It is important to note that the Equity Premium Puzzle is still an area of active research and debate, and no single theory has provided a definitive explanation. Economists continue to explore new models and empirical evidence to better understand the factors driving the observed equity premium.

Summary

1. The APT is a multi-factor asset pricing model that assumes that an asset's returns can be predicted using the linear relationship between the asset's expected returns and a number of macroeconomic variables that capture systematic risk.
2. The APT is based on the idea that investors are rational and will not accept an asset that is mispriced. If an asset is mispriced, an arbitrageur can buy the asset and sell it in another

market for a profit, without taking on any additional risk. This will force the price of the asset to move back to its fair value.

3. The APT model is more general than the capital asset pricing model (CAPM) because it does not assume that there is a single market portfolio. Instead, the APT allows for multiple factors that can affect the returns of all assets.
4. The APT model is also more complex than the CAPM because it requires the estimation of a larger number of parameters.
5. The APT model has been criticized for being too complex to be used in practice and for not being supported by empirical evidence. However, the APT model is still a valuable theoretical tool for understanding the pricing of assets.
6. The CCAPM is an extension of the capital asset pricing model (CAPM) that uses a consumption beta instead of a market beta to explain expected return premiums over the risk-free rate.
7. The CAPM assumes that investors are only concerned with the risk of their portfolio's returns relative to the market portfolio. However, the CCAPM recognizes that investors are also concerned with the risk of their portfolio's returns relative to their consumption.
8. The CCAPM states that the expected return of an asset is equal to the risk-free rate plus a premium for the risk of the asset's returns relative to consumption. The risk premium is proportional to the asset's consumption beta, which measures how much the asset's returns are affected by changes in consumption.
9. The CCAPM is a more realistic model than the CAPM because it takes into account the fact that investors are concerned with the risk of their portfolio's returns relative to their consumption. However, the CCAPM is also more complex than the CAPM because it requires the estimation of a consumption beta for each asset.

Keywords

- Arbitrage
- Stock
- Bonds
- Interest rate
- Inflation
- Exchange rate

Self Assessment

1. Which of the following statements is true about the Arbitrage Pricing Theory (APT)?

A. It is a single-factor model that assumes that all risk is diversifiable.
B. It is a multi-factor model that assumes that some risk is non-diversifiable
C. It is a model that assumes that investors are risk-neutral.
D. It is a model that assumes that investors are risk-averse.

2. Which of the following is not a factor that is typically included in an APT model?

A. Inflation
B. Interest rates
C. Exchange rates
D. Beta

3. An investor discovers that a stock is trading for $100 on the New York Stock Exchange and for $102 on the London Stock Exchange. This is an example of:

A. market anomaly.
B. An arbitrage opportunity.
C. diversification opportunity.
D. A risk premium.

4. The APT model is based on the following assumptions:

A. Investors are rational.
B. Investors are risk-averse.
C. Investors have homogeneous expectations.
D. All of the above

5. Which of the following is not a criticism of the APT model?

A. It is too complex to be used in practice.
B. B. It is not supported by empirical evidence.
C. It is not based on a solid theoretical foundation.
D. It is too sensitive to the choice of factors.

6. Which of the following statements is true about the consumption capital asset pricing model (CCAPM)?

A. It is a single-factor model that assumes that all risk is diversifiable.
B. It is a multi-factor model that assumes that some risk is non-diversifiable.
C. It is a model that assumes that investors are risk-neutral.
D. It is a model that assumes that investors are risk-averse.

7. Which of the following is not a factor that is typically included in a CCAPM model?

A. Inflation
B. Interest rates
C. Exchange rates
D. Beta

8. An investor discovers that a stock is trading for $100 today and for $102 in one year. This is an example of:

A. A market anomaly.
B. An arbitrage opportunity.
C. A diversification opportunity.
D. A risk premium.

9. The CCAPM model is based on the following assumptions:

A. Investors are rational.
B. Investors are risk-averse.

C. Investors have homogeneous expectations.
D. All of the above

10. Which of the following is not a criticism of the CCAPM model?
A. It is too complex to be used in practice.
B. It is not supported by empirical evidence.
C. It is not based on a solid theoretical foundation.
D. It is too sensitive to the choice of factors.

11. Which of the following statements is true about the equity premium puzzle?
A. It refers to the fact that stocks have outperformed Treasury bonds by an extraordinarily high margin over the last century.
B. It refers to the fact that stocks have underperformed Treasury bonds by an extraordinarily high margin over the last century.
C. It is a well-understood phenomenon that has been explained by a number of theories.
D. It is a puzzling phenomenon that has not been satisfactorily explained by any theory.
12. Which of the following theories is not a possible explanation for the equity premium puzzle?
A. Investors are risk-seeking
B. Investors are time-inconsistent.
C. Investors are biased towards the present.
D. Investors are not rational.

13. Which of the following is not a criticism of the equity premium puzzle?
A. It is based on historical data, which may not be representative of future returns.
B. It is difficult to measure the equity premium accurately.
C. It is possible that the equity premium is due to factors that are not yet fully understood.
D. The equity premium is not a puzzle at all, and is simply a reflection of the riskiness of stocks.

14. CCAPM suggests that asset prices are determined by the trade-off between their current consumption and future consumption.
A. True
B. False

15. The arbitrage pricing theory considers multiple macroeconomic risk factors and CAPM uses only one factor, i.e., expected market return
A. True
B. False

Answers for Self Assessment

1. B 2. D 3. B 4. D 5. C

6.	D	7.	D	8.	A	9.	D	10.	C
11.	D	12.	A	13.	D	14.	A	15.	A

Review Questions

1. What are different issues in stock market? Explain in detail.
2. Critically examine arbitrage pricing theory.
3. Differentiate between arbitrage pricing theory and capital asset pricing model.
4. Critically examine Consumption-Based Capital Asset Pricing Model.
5. Write a detailed note on equity risk premium puzzle.

Further Reading

1. International Financial Management By Cheol S Eun And Bruce G Resnick, M.G. Hills
2. International Finance Management By Jeff Madura, Cengage Learning

Unit 10: Financial Market Derivatives

CONTENTS

Objectives

After studying this unit the students will be able to

- Learn about options
- Discuss about futures
- Discuss about pricing of options-Black-Scholes model

Introduction

Derivatives trading history has developed in scope and complexity over time, creating the groundwork for the modern derivatives trade, which began in the 1970s. The underlying assets determine the value of derivatives as financial instruments. Throughout the past, these financial instruments have been traded in markets. The derivatives market is a financial market for financial products based on the prices of their underlying assets, such as options or futures contracts.

Financial Derivatives

Derivatives in the stock market are financial instruments whose value is derived from a variety of assets. For example, a derivative contract between two parties specifies the number of terms, such as the date on which payments must be made. Forwards, options, futures, and swaps are examples of derivatives. The values of these derivatives are derived from various assets, including equities, bonds, commodities (silver, gold, coffee, etc.), currencies, and interest fluctuations.

Kinds of derivatives.

Four main kinds of derivatives are as follows:

- Options
- Future
- Forwards
- Swap

10.1 Options and Future

Futures: Futures are exchange-organized contracts that determine a commodity's size, delivery time, and price. They are simple to trade because they are standardized by an exchange. A futures contract specifies some aspects of each commodity traded.

The first consideration is the commodity's quality. A commodity must meet certain conditions to be traded on the exchange. The size of a single contract, on the other hand, is the second factor to consider. The number of units of a commodity exchanged per contract is determined by its size. The third factor is the delivery date, which specifies when to deliver the commodity and in which month.

Forwards: Forwards are similar to futures in that the contract holder has the right and should carry out the contract as agreed. However, forwards are unregulated and unconstrained by specific trading regulations because they are over-the-counter items. Due to the Unstandardized nature of such contracts, they are traded over the counter rather than on the exchange market.

Options: An options contract gives the buyer the right but not the obligation to buy/sell the underlying securities to a different investor over a predetermined period, depending on the type of options contract. The security price in the options contract is known as the strike price, and the seller of the contract is called the option's writer. In an options contract, the buyer can pass on the exercise right as they are not obliged after paying the premium to the option's writer. There are two types of options contracts: A call option and a put option.

Swaps: Swaps are financial derivatives in which two holders exchange financial liabilities. The most typical swaps contracts entered into by investors are interest rate swaps. Swaps aren't traded on the stock exchange but exchanged over the counter. So it is because swaps contracts are customised to meet the demands and criteria of all groups involved.

Derivatives Market: The derivatives market is a financial market for financial products based on the prices of their underlying assets, such as futures contracts or options. They are sophisticated financial instruments used for various purposes, including hedging and gaining access to new assets or markets.

Groups of participants constitute the Derivatives Market

1. Speculators – These people engage in a high-risk activity. It entails the acquisition of any financial asset that an investor believes will appreciate significantly in the future. Speculation is motivated by the prospect of receiving large future rewards.
2. Hedgers – These people invest in financial markets to limit price fluctuations in exchange markets.
3. Margin traders – These traders deposit collateral with a counterparty to mitigate the credit risk associated with a financial instrument.
4. Arbitrageurs – It is a typical profit-making activity in financial markets that involves taking advantage of profiting from market fluctuations. These people profit from price differences in financial instruments such as bonds, equities, derivatives, and other investments.

Benefits of Derivatives Market

The derivatives market can be a handy tool for achieving financial objectives. For example, a corporation that wishes to hedge its commodity risk can do so by trading energy derivatives like crude oil futures. Similarly, a corporation could purchase currency forward contracts to mitigate its currency risk. Derivatives can also assist investors in leveraging their positions by allowing them to purchase equities via stock options rather than shares.

1. Hedge Risks: Derivative trading lets you hedge your position in the cash market. For example, if you buy a positional stock in the cash market, you can buy a Put option in the derivative market. If the stock tumbles in the cash market, the value of your Put option will increase. Hence, your losses will be minimal or nil.

2. Low Expenses: Since derivative trading is primarily done to reduce risks, the charges are lower compared to shares or debentures.
3. Transfer Risks: Unlike stock trading, derivative trading allows you to transfer the risks to all stakeholders involved in the process. Hence, your risks reduce considerably.

Disadvantages of Derivatives

When invested with prior knowledge and extensive research, derivatives trading may offer numerous benefits toward hedging or increasing profits. However, these financial instruments are complex at their core and come with certain disadvantages for the market entities.

1. High Risk: These instruments are market-linked and derive their value in real-time based on the changing price of the underlying asset. Such prices depend on the demand and supply factors and are volatile. The volatility exposes such financial contracts to risk, forcing the entities to incur potentially huge losses.
2. Speculation: A large part of the derivatives market follows a system of assumptions. Entities speculate on the future price direction of the underlying asset and hope to profit from the difference between the strike price and the exercise price. However, if the speculation goes sideways, entities can incur losses.
3. Counterparty Risk: Although market entities can trade futures contracts through supervised exchanges, they trade options contracts over the counter. It means there is no defined system for due diligence with a possibility of the other party defaulting on the payment or exercise promise. Hence, counterparty risk can expose market entities to financial losses.

How To Trade in the Derivatives Market?

Having understood the derivatives definition, the next step in effective diversification and making better profits is learning about trading in these financial contracts. You can follow the process below.

Choose a quality lender and create an online trading account before you can begin to trade in various financial contracts. The Demat account has the added service of trading in the F&O contracts. Once you open a Demat account, you can ask the stockbroker to open an account with the F&O service. The broker requires you to pay a margin amount, which you must maintain until you execute or leave the contract. While trading, if your account falls below the minimum required margin, you will get a margin call to rebalance the trading account. You can only trade in financial contracts available in the market, which usually has an expiry date of three months and expires on the last Thursday of the month. Hence, you must settle the contract within the specified expiry date, or it will get auto-settled on the expiry day.

Notes: Derivatives allow various investors to hedge against future losses or make profits based on the price difference. Although they can provide numerous benefits to the participants, it is essential to trade them with caution as they require extensive knowledge to trade successfully. Thus, it is always wise to consult your stockbroker and create a strategy based on market evaluation and practical techniques to deal successfully with these financial contracts.

10.2 Black- Scholes Model for Option Pricing

The Black- Scholes Model was developed by economists Fischer Black and Myron Scholes in 1973. The Black- Scholes model works on five input variables:

- Underlying Asset price,
- Strike Price,
- Risk Free Assets,

- volatility, and
- expiration time.

Underlying Assets: The underlying asset is defined as the asset on which the financial instruments, such as derivatives, are based, and the underlying asset's value is indirectly or directly related to the contracts of the derivatives. They are always traded on the cash markets, whereas the derivatives derived from them are traded on the derivative segment or the future markets.

Strike or Exercise Price: The underlying asset is defined as the asset on which the financial instruments, such as derivatives, are based, and the underlying asset's value is indirectly or directly related to the contracts of the derivatives. They are always traded on the cash markets, whereas the derivatives derived from them are traded on the derivative segment or the future markets. It is a mathematical model that utilizes a partial differential equation to calculate the price of options. This partial differential is known as the Black-Scholes equation.

Banks and Financial institutions use this model for evaluating European options. The primary objective behind the model is to hedge options in a portfolio and eliminate the risk factor.

Fischer Black and Myron Scholes met at the Massachusetts Institute of Technology (MIT) and started a partnership that lasted 25 years. Their pricing model completely revolutionized technical investing. Black and Scholes won the Nobel prize for their contribution in 1997. Black and Scholes assume there are no market arbitrage opportunities or riskless profits. This is why the model receives criticism.

Volatility: In real-world scenarios, volatility is not constant across time; transaction costs exist.

Real-world data depicts that price returns tend to have a skewed distribution; prices fall much faster than they rise. At the beginning of the 20th century, French mathematician Louis Bachelier made an analogy between Brownian motion and the movement of Financial assets in his Theory of Speculation. The Black-Scholes theory incorporates this assumption.

Assumptions of Black-Scholes

1. Black-Scholes model assumptions are as follows.
2. Black-Scholes theory assumes that option prices exhibit Brownian motion.
3. The model assumes that risk-free rates are constant. In reality, they are dynamic—they fluctuate with supply and demand.
4. The theory assumes stock returns resemble a log- normal distribution.
5. It also assumes that we have a frictionless market; that there are no transaction costs, which is not the case with real-world scenarios.

Black and Scholes neglect dividend payouts throughout the option period. The Black- Scholes Model Formula is as follows:

The Black-Scholes model formula is as follows:

$$\frac{\partial V}{\partial t} + \frac{1}{2}\sigma^2 S^2 \frac{\partial^2 V}{\partial S^2} + rS\frac{\partial V}{\partial S} - rV = 0$$

The above equation determines the stock options price over time.

The following formula compute the price of call option C:

$$C(S_t, t) = N(d_1)S_t - N(d_2)PV(K)$$

Here,

- $d_1 = \frac{1}{\sigma\sqrt{T-t}}\left[\log\left(\frac{S_t}{K}\right) + \left(r + \frac{\sigma^2}{2}\right)(T-t)\right]$
- $d_2 = d_1 - \sigma\sqrt{T-t}$
- $PV(K) = Ke^{-r(T-t)}$

The following formula calculates the price of a Put Options P:

$$P(S_t, t) = Ke^{-r(T-t)} - S_t + C(S_t, t) = N(-d_2)Ke^{-r(T-t)} - N(-d_1)S_t$$

In this equation, N equals the cumulative distribution function of the standard normal distribution. It represents a standard normal distribution with mean =0 and standard deviation = 1

T-t refers to the maturity period (in years).

St is the underlying asset's spot price.

K denotes the strike price.

r represents the risk-free rate.

Ó symbolizes the underlying assets' return volatility.

Importance

1. It is a prominent option pricing model, in addition to the binomial model.
2. Traders and analysts use it to determine the fair value of a stock.
3. Using this model, investors or traders can hedge their position with minimum risks.
4. Options trading is an advanced form of investment and market study. The Black-Scholes method plays a key role in determining the price.

Limitations

1. The model works only on European options not on US options.
2. The pricing of in-the-money options is accurate, but deviations are high for out of money options.
3. The model can estimate volatility only when other factors are calculated. This reliance makes the model limiting.
4. The model assumes the same condition, irrespective of the application. For example, it assumes a frictionless market.

Resolving Limitations

Problems associated with the unrealistic Black-Scholes assumptions have been solved using partial derivatives— Options Greeks. Black-Scholes is a multivariate equation; institutional traders want to understand how each variable functions in terms of other variables in isolation. It allows traders to strip down financial risks into several types that can be properly managed and hedged. The most common Option Greeks are delta, gamma, theta, Vega, and rho. Each parameter measures one

specific type of risk associated with an option position. The delta measures exposure to the directional risk. Similarly, the gamma measures the exposure to price fluctuations in either direction. And the theta measures the exposure to the passage of time. On the other hand, Vega measures the exposure to changes in implied volatility. Rho measures the exposure to changes in the risk-free interest rates. Now, institution traders do not trade based on price direction. Instead, they use the Black-Scholes method and its partial derivatives to determine price volatility.

 **Notes:** Option price volatility is easier to determine than price direction since it is mathematical.

10.3 Binomial Option Pricing Model

The Binomial Option Pricing Model is a widely used method for valuing options, which are financial instruments that give the holder the right, but not the obligation, to buy or sell an underlying asset at a specified price on or before a specified date. The binomial option pricing model is a way for investors to evaluate options— contracts to buy or sell specific securities at specified prices — over time. The Binomial Option Pricing Model is a mathematical technique that estimates the value of an option by simulating potential price movements of the underlying asset. It uses a decision-tree approach to determine the option's value at each possible future point in time.

Components of the Binomial Option Pricing Model

Three key components of the Binomial Option Pricing Model are the

- Binomial tree
- Risk-neutral probabilities, and
- Backward induction

The binomial tree represents the possible price movements of the underlying asset, risk-neutral probabilities are used to calculate expected payoffs, and backward induction calculates the option's value at each node. The Binomial Option Pricing Model is applicable to various types of options, including European, American, and exotic options. The binomial pricing model was first proposed by mathematicians Cox, Ross, and Rubinstein in 1979. The model provides a simple way to portray stock price movements and the interest rate term structure. The binomial model displays the underlying stock price movements using a discrete-time binomial lattice (tree) framework. One can identify it just by the probability of an upward rise and the size of the moves in the upward and downward phases of the options. The binomial options pricing model provides investors a tool to help evaluate stock options. It assumes that a price can move to one of two possible prices. The model uses multiple periods to value the option. The periods create a binomial tree — In the tree, there are two possible outcomes with each iteration. These outcomes are a move up or down the tree. To value the option, an investor needs to know the current price of a stock and the strike price of the option. The investor also needs to know the expiration date of the option.

Example: An investor is trying to determine the value of a stock option. The current stock price for fictitious Company Z is $100, and the strike price is also $100.

For purposes of this example, the expiration date is in one year. The investor is confident that at the end of the year, the stock price will either be $120 or $80. They predict there is a 55% chance that the stock will be $120, and a 45% chance that it will be $90. The investor will use this information in the binomial options pricing model to find out what the current value of the option should be.

Calculation Example

Let's assume the current price of an option is $20, and the investor expects the prices to shift between $25 and $15. This is the current situation. The binomial method enables us to move to the next period, assuming the next course of action should occur within a month. During that period, volatility factors could kick in, and the prices could shift from the two initial predictions.

The first prediction was $25, and the second was $15. From the first initial prediction, i.e., $25, the price could vary between $20 and $15; and from the second initial prediction, i.e., $15, the price could vary between $20 and $10. At each node, one can determine various option values. For example, the first month's option strike price was $20. If the price had increased to $25, the option would be worth $5, and if the value were decreased to $15, there would be no return. This evolution process gives the investor the freedom to choose the desirable price.

Assumptions and Parameters of the Binomial Option Pricing Model

The Binomial Option Pricing Model relies on several key assumptions and parameters that must be defined in order to accurately value an option.

1. Risk-Neutral Valuation: In the risk-neutral valuation approach, the model assumes that investors are indifferent to risk. This simplifies calculations, as expected returns are equal to the risk-free rate.
2. Discrete Time Steps: The model divides the time until the option's expiration into discrete, equal intervals. This assumption allows for a clear representation of potential price movements and simplifies calculations.
3. Stock Price Movements: The model assumes that the underlying asset's price can either move up or down at each time step. This assumption simplifies the decision tree and makes calculations more manageable.
4. Interest Rates and Time: The model assumes a constant, risk-free interest rate throughout the option's life. Additionally, the time between each step is assumed to be the same, which helps ensure consistency in calculations.

Steps in the Binomial Option Pricing Model

The Binomial Option Pricing Model involves several key steps to accurately determine the value of an option.

1. Building the Binomial Tree: The binomial tree is a visual representation of possible stock price movements over time. It is constructed by dividing the time to expiration into equal intervals and calculating the possible stock prices at each node.
2. Option Valuation at Maturity: At the end of the binomial tree, the option's value is determined by comparing its strike price to the underlying asset's price. This comparison results in either a positive payoff or zero, depending on whether the option is in or out of the money.

3. Risk-Neutral Probabilities: Risk-neutral probabilities are used to calculate the expected payoffs at each node in the tree. These probabilities are calculated based on the risk-free interest rate, stock price movements, and time between steps.
4. Backward Induction: Backward induction is the process of working backward through the binomial tree to determine the option's value at each node. The expected payoffs at each node are discounted back to the present, resulting in the option's current value.

Disadvantages of Model

The process of valuing the option is longer. This is because the calculations will take more time than other models if many possibilities are considered. It is not very helpful if the calculation is for many possibilities swiftly (due to the above-mentioned point). Market forces decide the real values of options contracts, not a complicated formula; hence is a major shortcoming of all pricing models.

 **Notes:** The Binomial Option Pricing Model is a widely used method for valuing options that estimates the value of an option by simulating potential price movements of the underlying asset. The model relies on several key assumptions and parameters that must be defined to accurately value an option, including risk-neutral valuation, discrete time steps, stock price movements, interest rates, and time. The model involves several key steps, including building the binomial tree, option valuation at maturity, risk-neutral probabilities, and backward induction. The Binomial Option Pricing Model can be used to value various types of options, including European, American, and exotic options, and is widely used by financial professionals for investment and risk management purposes.

10.4 Futures Pricing

The futures pricing formula is essential to understand, and that's why this formula must have clear attention while discussing. In futures trading, there are different sets of traders; some traders are called instinctive traders that make their decisions based on feelings. Successful trading requires skills, knowledge and experience to turn your trading into a profitable one. However, it is important to understand the future pricing formula when stepping into future trading.

What does Future Price Mean?

A future price is measured by the moves in sync and the cost of the underlying asset. If the cost of underlying increases, the cost of futures will rise and if it decreases, the cost of future will fall. Remember, the future price is not equal to the value of the underlying asset because, in the market, they can be traded at several different prices.

 For example, let's say, the Nifty Spot is at 8,845.5 whereas the corresponding current month contract is trading at 8,854.7. This difference in price between the futures price and the spot price is called the "basis or spread". In the case of the Nifty, the spread is 9.2 points (8854.7 – 8845.5).

The difference in price is attributable to the 'Spot – Future Parity'. The spot future parity is the difference between the spot and futures price that arises due to variables such as interest rates, dividends, time to expiry, etc.

In a very loose sense, it is simply a mathematical expression to equate the underlying price and its corresponding futures price. This is also known as the futures pricing formula. The future price is a mathematical representation of how future prices change if any of the variables in the market changes.

Future Pricing Formula

The futures pricing formula simply states –

Futures Price = Spot price *(1+ rf)– d

Where,

rf = Risk-free rate, d = Dividend

Note, 'rf' is the risk-free rate that you can earn for the entire year (365 days);

A risk-free return rate means a return rate on a particular investment with absolutely zero risks— for example – a treasury bill.

What does Future Price Mean?

Considering the expiry is at 1, 2, and 3 months one may want to scale it proportionately for time periods other than the exact 365 days. An individual can adjust a treasury bill proportionately for two to three months until the future expiry. So with that, the formula is:

Futures Price = Spot price * [1+ rf*(x/365)]– d

Where, x = number of days to expiry.

 **Example:** Let's discuss it with an example. The spot price of ABC Corporation is Rs 2,380.5, Risk-free rate = 8.3528 percent, Days to expiry = 7 days,

Futures Price = 2380.5 x [1+8.3528 (7/365)] – 0

Here we have written zero at the end because the company is not paying any dividend on it, but if the company pays any dividend, it will be included in the formula. This futures price formula will give you what we call the 'fair value.' The major difference between market prices and fair value is caused by a margin, taxes, and transaction charges. Using this future pricing formula, we can quickly calculate a fair value for any expiration days.

Mid-month calculation

The number of days to expiry is 34 days,

Fair Value = 2380.5 x [1+8.3528 (34/365)] – 0.

Far-month calculation.

The number of days to expiry is 80 days.

Fair value = 2380.5 x [1+8.3528 (80/365)] – 0

Clearly, there is a difference between the calculated fair value and the market price. This would be attributed to the applicable costs. Besides, the market could be factoring in some financial yearend dividends as well. However, the key point to note is as the number of days to expiry increases, the difference between the fair value and market value widens.

Contango and premium

In fact, this leads us to another important commonly used market. If the futures trading is higher than the spot, which mathematically speaking is the natural order of things, then the futures market is said to be at a 'premium'. While 'Premium' is a term used in the Equity derivatives markets, the commodity derivatives market prefer to refer to the same phenomenon as 'Contango'. However, both Contango and premium refer to the same fact – The Futures are trading higher than the Spot.

The price of a futures contract is just the spot price of an underlying asset that is adjusted for time, interest, and paid-out dividends. The difference between the futures price and the spot price forms the basis of the spread. At the beginning of the series, the spread is maximum, but soon it converges into the settlement date. The future prices and spot price of an underlying asset are equal at the time of the expiration date.

Clearing House: In an active market, futures are traded through an exchange which is called a clearinghouse. In India, the National Stock Exchange Limited (NSE) participates in futures trading through the future index.

Buying Vs. Selling Future Contracts: Futures are legal and standardized agreements. In the future, the buyer generally has a long position while the seller has a short position.

Margin Requirement: Margin means the total amount that is deposited in the clearinghouse by the parties. When the time comes, it acts as a guarantee that all parties will honour this contract. At the start of the trade, both parties have to deposit a margin. Due to the market process, if the starting margin falls drastically down than the maintenance amount, the part will receive a margin call.

Marking to Market: Marking to market is a process in which future prices are settled daily. The rise and fall of future prices are because of active trading. After each trading, clearing houses have

adopted to pay the price difference by crediting and debiting the margin amount from the differential amount deposited by the parties.

The futures pricing formula states that the

Futures Price = Spot price *(1+Rf (x/365)) – d

The difference between futures and spot is called the basis or simply the spread

The futures price as estimated by the pricing formula is called the "Theoretical fair value". The price at which the futures trade in the market is called the 'market value'. The theoretical fair value of futures and market value by and large should be around the same value. However, there could be slight variance mainly due to the associated costs. If the futures are rich to spot then the futures is said to be at a premium else it is said to be at a discount.

Futures trading requires a lot of practice and understanding. Market variables are also present that influence future prices in the market. However, learning the future pricing formula is a solid way to start trading. It will help to easily understand all the future quotes and plan the position better.

Summary

1. Forwards are similar to futures in that the contract holder has the right and should carry out the contract as agreed. However, forwards are unregulated and unconstrained by specific trading regulations because they are over-the-counter items. Due to the Unstandardized nature of such contracts, they are traded over the counter rather than on the exchange market.
2. An options contract gives the buyer the right but not the obligation to buy/sell the underlying securities to a different investor over a predetermined period, depending on the type of options contract.
3. The derivatives market is a financial market for financial products based on the prices of their underlying assets, such as futures contracts or options. They are sophisticated financial instruments used for various purposes, including hedging and gaining access to new assets or markets.
4. The Binomial Option Pricing Model is a widely used method for valuing options, which are financial instruments that give the holder the right, but not the obligation, to buy or sell an underlying asset at a specified price on or before a specified date. The binomial option pricing model is a way for investors to evaluate options— contracts to buy or sell specific securities at specified prices — over time.
5. A future price is measured by the moves in sync and the cost of the underlying asset. If the cost of underlying increases, the cost of futures will rise and if it decreases, the cost of future will fall. Remember, the future price is not equal to the value of the underlying asset because, in the market, they can be traded at several different prices.

Keywords

- Futures
- Options
- Contracts
- Future trading
- Future pricing

Self Assessment

1. Which of the following are kinds of derivatives?

A. Future
B. Forwards
C. Swap
D. All of the above

2. A futures contract is:

A. A contract to buy or sell an asset at a specified price on a specified date in the future.
B. A contract to buy or sell an asset at the current market price.
C. A contract to buy or sell an asset at a price that is agreed upon today, but the delivery will take place in the future.
D. A contract to buy or sell an asset at a price that is determined by the market on the day of delivery.

3. An option contract is:

A. A contract to buy or sell an asset at a specified price on a specified date in the future.
B. A contract to buy or sell an asset at the current market price.
C. A contract to buy or sell an asset at a price that is agreed upon today, but the delivery will take place in the future.
D. A contract that gives the buyer the right, but not the obligation, to buy or sell an asset at a specified price on a specified date in the future.

4. A call option is:

A. A contract that gives the buyer the right, but not the obligation, to buy an asset at a specified price on a specified date in the future.
B. A contract that gives the buyer the right, but not the obligation, to sell an asset at a specified price on a specified date in the future.
C. A contract that gives the seller the right, but not the obligation, to buy an asset at a specified price on a specified date in the future.
D. A contract that gives the seller the right, but not the obligation, to sell an asset at a specified price on a specified date in the future.

5. A put option is:

A. A contract that gives the buyer the right, but not the obligation, to buy an asset at a specified price on a specified date in the future.
B. A contract that gives the buyer the right, but not the obligation, to sell an asset at a specified price on a specified date in the future.
C. A contract that gives the seller the right, but not the obligation, to buy an asset at a specified price on a specified date in the future.
D. A contract that gives the seller the right, but not the obligation, to sell an asset at a specified price on a specified date in the future.

6. A futures contract is traded on:

A. A futures exchange.
B. A spot market.

C. A forward market.
D. A currency market.

7. An option contract is traded on:
A. A futures exchange.
B. A spot market.
C. A forward market.
D. A currency market.

8. A futures contract is a standardized contract, while an option contract is a non-standardized contract.
A. True.
B. False.

9. The Black- Scholes model works on which of the following inputs.
A. Strike Price,
B. Risk Free Assets,
C. volatility
D. all of the above

10. Which of the following are assumptions of Binomial Option Pricing Model?
A. underlying asset's price can either move up or down at each time step
B. investors are indifferent to risk.
C. Both and b
D. None of the above

11. Futures contracts are used to hedge against risk, while option contracts are used to speculate on future price movements.
A. True.
B. False.

12. Which of the following are disadvantages of the Binomial option pricing model?
A. Process of valuing the option is longer
B. This model is not helpful if the calculation is for many possibilities
C. Both a and b
D. None of the above

13. A future price is measured by the moves in sync and the cost of the underlying asset.
A. True
B. False

14. The future price is a mathematical representation of
A. How future price change if any of the variables in the market changes.
B. Change in income
C. Change currency value
D. None of the above

15. If the expected future price of the underlying asset is lower than the spot price, then the futures price will be:

A. Higher than the spot price.
B. Lower than the spot price.
C. Equal to the spot price.
D. Cannot be determined.

Answers for Self Assessment

1.	D	2.	C	3.	D	4.	A	5.	B
6.	A	7.	B	8.	A	9.	D	10.	C
11.	A	12.	C	13.	A	14.	A	15.	B

Review Questions

1. How is the Black-Scholes model used to price options?
2. Critically examine future pricing.
3. Critically examine Binomial Option Pricing Model.
4. Write a detailed note on options and futures.
5. What are different parameters of Binomial option pricing model. Explain in detail.

Further Reading

1. International Financial Management By Cheol S Eun And Bruce G Resnick, M.G. Hills
2. International Finance Management By Jeff Madura, Cengage Learning

Unit 11: International Monetary System

CONTENTS

Objectives

After studying this unit the students will be able to

- Discuss about international monetary system
- Discuss about paper currency standard
- Learn about purchasing power parity
- Discuss about Bretton Woods agreement

Introduction

Movement of goods across national borders requires movement of money in the opposite direction. For example when the US buys coffee from Brazil, it must send money to the Brazilians. When Japan purchases petroleum from Saudi Arabia, it must send money to the Saudis, and so on. For these payment to go on smoothly, there must be certain rules and conventions governing the international financial conduct of nations. The international monetary system is a set of conventions and rules that support cross-border investments, trades, and the reallocation of capital between different countries. These rules define how exchange rates, macroeconomic management, and balance of payments are addressed between nations. The international monetary system structure was reformed after the North Atlantic financial crisis of 2008-2009. The central element of the international monetary system involves the arrangements by which exchange rates are set. The purpose of an exchange-rate system is to facilitate and promote international trade and finance. There have been three major exchange rate regimes from a historical perspective – fixed, floating, and managed exchange rates. Moreover, it's the worldwide network of the government and financial institutions that determine the exchange rate per currency. It is amazing how the monetary system has evolved from centuries ago where gold coins where used as a way of currency, and where people had to barter products or goods to receive something in exchange. The international monetary system, aids countries by loaning them money so they can overcome poverty, and debts. Some countries struggle with inflation which means that there is too much product and no demand for it. The international monetary system is the operating system of the global financial environment. This body comprises investors, multinational companies, and financial institutions.

Did you know?

What is inflation?

The persistent rise in prices is known as inflation.

The International Monetary System formulates the framework that facilitates the exchange rates, international payments, and movement of capital between two countries with different currencies. The prerogative of the International Monetary System is to facilitate the exchange of capital, goods, and services between countries. The International Monetary Fund (IMF) oversees articles of the agreement signed in this regard between countries. The responsibility of member countries is to formulate economic and financial policies that facilitate the economic and financial conditions to ultimately result in economic growth by maintaining price stability.

Since the 19th Century, the International Monetary System has undergone four stages of evolution at different points in time to form the structure as we know it today. Let us understand the occurrences that led to the changes and their current implications through the points below:

- The Gold standard
- The War Period
- The Bretton Woods System
- The Jamaica System

The Gold Standard

Between 1880 and 1914, the gold standard was referred to as the monetary system through which each country could fix the value of their currency in terms of gold. The exchange rate was based on the determined value.

 For example, if the U.S. fixed 1 ounce of gold = $20. The United Kingdom had set the value of one ounce of gold equal to 10 pounds. Then, the pound-dollar exchange rate would be $20 = 10 Pounds.

The War Period

Between 1925-1933 between the world wars, the gold standard started losing its way. The war had created a dent in the world economy, and every country wanted to export more to revamp and rebuild their economies.

Therefore, they significantly depreciated their currencies' value to export extensively and benefit from economies of scale. This period of chaos and rebuilding saw exchange rates fluctuate and competitive devaluation unlike ever before.

The Bretton Woods System

Only a few nations had the resources to survive after two world wars, while others struggled to feed their citizens. In times like these, the United States of America and the United Kingdom started discussing the possibilities and ways to rebuild the world economy after two disastrous wars in the mid-1940s. The United Nations formulated the new international monetary system at the Bretton Woods Conference in Bretton Woods, New Hampshire. The Bretton-woods conference led to the creation of a dollar-based fixed exchange rate system.

Under this system, the U.S. dollar was backed by reserve gold. All other currencies did not have to maintain a gold reserve for conversion. Therefore, the conversion rates were minimal.

The Jamaica System

Around 1971, high inflation rates and a trade deficit led to a gold process hike. Therefore, the U.S. had to stop the convertibility of gold. Owing to factors like these, the Bretton Woods system collapsed.

Hence the global economy moved towards a flexible exchange rate system in 1973 and by 1976. They formalized the system through the convention in Jamaica. Under the Jamaica or floating rate system, demand and supply would affect the currency exchange rates.

Did you know?

What is flexible exchange rate?

A flexible exchange rate, also known as a floating exchange rate, is a system in which a country's currency exchange rate is determined by the foreign exchange market based on supply and demand.

Functions of International Monetary System

1. Facilitates the free flow of different currencies in the open market.
2. Restrict intervention from government or central banks only in cases of currency stabilization.
3. Facilitate global trade of goods, services, and money.
4. Maintain a system that regulates the exchange rates through the forces of the market and not by any particular institution or organization.

11.1 Paper Currency Standard

Paper standard consists of paper money which is unlimited legal tender and token coins of cheap metals. Paper money may be either convertible or inconvertible. Convertible paper money is convertible into gold or silver coins or bullion of specified weight on demand. Paper money is not convertible into coins of a precious metal of bullion now-a-days. Therefore, it is inconvertible. People accept it because it is legal tender. Since it has the command of the government, people have to accept it. That is why it is also known as fiat money or standard.

It is also referred to as managed standard because the issue of paper money and token coins is managed by the central bank of the country.

Merits: Paper Currency Standard

1. Economical: The paper standard is cheaper than gold or silver standard. There is no need to waste gold or silver for coinage purposes. Rather precious metals can be used for productive purposes and for making payments to foreign countries. As paper money is not convertible, there is no need to keep gold in the form of reserves. The monetary authorities keep only a fixed quantity of gold in reserve for reasons of security. Thus the paper standard is cheap and economical and even a poor country can easily adopt it.
2. Elastic: The paper standard is a highly useful monetary system because it possesses great elasticity. The monetary authority can easily adjust the money supply in accordance with the requirements of the economy. This was not possible under the gold standard. The supply of money can be increased by printing more notes in times of financial emergency, war, and for economic development. It can also be reduced when the economic situation so demands. Thus there is also freedom in the management of the money supply in the economy.
3. Price Stability: As a corollary to the above, the paper standard ensures price stability in the country. The monetary authority can stabilise the price level by maintaining equilibrium between demand and supply of money by an appropriate monetary policy.
4. Free from Cyclical Effects: paper standard is free from the effects of business cycles arising in other countries. This merit was not available to other monetary standards, especially the gold standard, where cyclical movements in one country were automatically passed on to other countries through gold movements.
5. Portable: It is very convenient to carry large sums of paper money from one place to another.

6. Full Utilisation of Resources: The gold standard had a deflationary bias whereby the resources of the country remained unutilized. Whenever there was gold outflow prices fell and resources became unemployed. But this is not the case under the paper standard in which the monetary authority can manipulate the monetary policy in order to ensure full utilisation of the country's resources.
7. Equilibrium in Exchange Rate: One of the merits of the paper standard is that it immediately restores equilibrium in the exchange rate of a country whenever disequilibrium occurs in the demand and supply of its currency in the foreign exchange market.

De-Merits: Paper Currency Standard

1. Inflationary Bias: One of the serious defect of the paper standard is that it has an inflationary bias. As paper notes are inconvertible, there is every likelihood of the government printing notes in excess of the requirements. Or, the government may deliberately resort to the printing press to meet a financial emergency or war or even to meet ordinary budget deficits. This leads to excess of money supply and to inflation in the country.
2. Price Stability a Myth: It has been pointed out in the merits of the paper standard that it leads to price stability. In actuality, price stability is a myth as has been the experience of the majority of countries on the paper standard.
3. Lacks Confidence: Paper money lacks confidence as it is not backed by gold reserves.
4. Lacks Durability: Paper money has less durability than metallic coins. It can be easily destroyed by fire or insects.
5. Unstable: Paper money lacks stability because its supply can be changed easily.
6. Exchange Instability: Another disadvantage of this system is that it leads to instability in exchange rates whenever there are large fluctuations in external prices as against internal prices. Such wide and violent fluctuations in exchange rates are harmful for the growth of international trade and capital movements among countries. These have led governments to adopt exchange control measures.
7. Uncertainty: Instability in the value of paper money leads to uncertainty in the economy which adversely affects business and economic progress.
8. Token Money: Paper money is token money and in the event of de-monetisation of notes, they have no intrinsic value and are simply like waste paper.
9. Not Automatic: The paper currency standard does not operate automatically. It is a highly managed standard which requires much care and caution on the part of the monetary authority.

11.2 Purchasing Power Parity

Purchasing power parity or PPP refers to a rate at which the currencies of various countries get converted to equalize the purchasing power of distinct currencies by eliminating price levels difference amongst the countries. Its calculation helps to compare the economic wealth and Gross Domestic Product or cost of living of any two countries globally using the basket of goods approach. PPP is a key factor in comparing the GDP of multiple countries. It considers a single price approach meaning all the goods will cost the same in the US dollar. The World Bank is the nodal agency for computing the PPP globally using the official exchange rate (OER).

Purchasing power parity theory refers to a macroeconomic metric that economists use to compare the purchasing power of one country's currency with that of other countries currencies. An idea in the sixteenth century's school of Salamanca led to the concept of PPP. Later, Swedish economist Gustav Cassel developed this theory in 1916 in his book "The Present Situation of the Foreign

Trade." Analysts and economists use this exchange rate to calculate and compare the prices of a basket of products of the same type in two countries. Using PPP helps one to find the lowest price of goods or services globally. Moreover, it allows a comparison of purchasing power of various currencies at equilibrium using exchange rates when the basket of products has the same cost in any two countries. The theory of PPP assumes that trading goods and services across countries bring about major differences in their spot exchange rate. Moreover, it suggests that many transactions start affecting a country's current account, leading to a change in the exchange rate related to that country's foreign exchange.

The Law of one price (LoOP) forms the pillar of the PPP theory. However, economists apply it aggregately and with certain riders. For example, LoOP says that under nil taxes and transportation charges in any two markets, the cost of the same products is the same. As a result, countries with multi or free trade agreements have less parity in goods and services prices than those with fewer trade agreements. Moreover, PPP is the twisted version of LoOP, where economists apply a single price band as aggregate. The twist is that if LoOP holds for a small set of identical products, it must hold for all the same products in any two markets. As a result, PPP always relates between the country's exchange rate and its price indices.

Types Of Purchasing Power Parity

In macroeconomic theory, one finds the following two different types of PPP:

1. Absolute Parity: It means that a basket of identical products in one country will cost the same in another, irrespective of the country in which it is produced. However, it gets skewed and static in the absence of excluding inflation.
2. Relative Parity: Relative purchasing power parity includes inflation while stating that the exchange rate equals the price levels of goods in the long term. Therefore, inflation will homogenize PPP making it equal to the exchange rate in the long term.

Purchasing Power Parity Formula

Purchasing Power Parity = Cost of good X in currency 1 / Cost of good X in currency.

 **Example:** Let us take the example of purchasing power parity between India and the U.S. Suppose an American visits a particular market in India. The visitor bought 25 cupcakes for ₹250 and noticed that cupcakes are quite cheaper in India. The visitor claimed that, on average, 25 such cupcakes cost $6. Calculate the purchasing power parity between the two countries based on the given information.

Purchasing power parity = Cost of 25 cupcakes in INR / Cost of 25 cupcakes in USD

= ₹250 / $6

Calculation of purchasing power parity of India w.r.t U.S. will be:

Purchasing Power Parity of India w.r.t U.S. = ₹41.67 per dollar. Therefore, the purchasing power parity ratio of the exchange for cupcakes is USD1 = INR 41.67.

Advantages Of Purchasing Power Parity

PPP is the oldest method of theoretical economics that aids the comparison of prices of the same products across different nations. Hence, there are many advantages of using the PPP as an economic parameter, as listed below:

1. If the goods or services do not cost the same in two countries, one currency gets undervalued more than the other.
2. It helps determine market distortions arising out of government and inflation in a country.
3. It is the best method to gauge the trade imbalances between two countries based on imbalanced PPP.

4. The difference in PPP is a key indicator of differences in the standard of quality of life between the two countries.
5. PPP is a good measurement tool to measure the wealth of any country. But unfortunately, GDP metrics can represent a nation's wealth inaccurately.
6. An economist could correct the trade imbalance between two countries by observing the differences between the country's currency rate and PPP. As a result, only a little adjustment in the currency valuation could lead to a balance of trade differences.
7. The most important advantage of PPP is that it has remained stable over the years.
8. Moreover, PPP is the best measure of a nation's overall economic health. This is because it considers all the non-traded goods across the nation.

Limitations of the PPP measure

The PPP measure has several limitations:

1. One limitation is that it relies on a fixed basket of goods and services, which may not accurately reflect changes in consumer behaviour or technological advancements.
2. Additionally, PPP does not account for differences in quality across products, and it assumes that consumers have perfect price information.
3. Finally, PPP calculations can be influenced by political factors, such as government subsidies or tariffs, which can distort market prices.

11.3 Bretton Woods System

The Bretton Woods system was an international monetary agreement that standardized currency exchange rates. Currencies belonging to various nations were pegged against the US dollar. US dollar itself was pegged against the price of gold.

The Bretton Woods system was developed as an international monetary exchange arrangement. The system fixed currencies belonging to 44 countries against the value of the US dollar. The US dollar itself was pegged against the price of gold. Initially, one ounce of gold was worth $35. This system was followed between 1945 and 1973. On July 01, 1944, 730 representatives from 44 countries attended the United Nations Monetary and Financial Conference. The conference was held at Bretton Woods, New Hampshire. Providing consent to a new international monetary system was the purpose of this conference. It was a collective strategy to recover from the impact of World War II.

The representatives wanted to revitalize international trade by standardizing exchange rates across the globe. The allied countries duly accepted the Bretton Woods Agreement. Canada, Mexico, Russia, Brazil, China, India, Netherlands, Poland, Belgium, Chile, and Czechoslovakia were the active member nations. In December 1945, the Bretton Woods Agreement led to the formation of two Bretton Woods Institutions—The International Bank for Reconstruction and Development and The International Monetary Fund (IMF). The International Bank for Reconstruction and Development is the lending arm of the World Bank. These organizations hold great significance on the global front—they facilitate international trade and finance nations. The World Bank was established to help nations recover from World War II. The International Monetary Fund regulates global exchange rates. The IMF also facilitates economic cooperation internationally.

Features

Bretton Woods aimed to fix problems of the standardized monetary valuation. Characteristics of Bretton Woods are as follows:

1. Stabilizing international exchange rates was the primary objective of Bretton Woods.
2. It was an attempt to help nations recover economically post-World War II.

3. Bretton Woods was adopted by 44 countries—they agreed to peg their currencies against the USD.
4. The US Dollar was pegged against the price of gold—fixed at $35 per ounce of gold.
5. The US Dollar was considered—an international reserve currency.
6. It provided a fixed exchange rate. However, this rate was adjustable.1
7. It standardized international monetary payments—by facilitating currency conversion.
8. Post Bretton Woods, allied countries did not have any control over the international payment and settlement system.

Collapse of Bretton Woods

Between 1968 to 1973, Bretton Woods was on its way out. US President Richard M. Nixon ceased USD-gold convertibility.

In the 1960s, the US dollar struggled to hold its value. Nixon noticed that the US was short on gold. US's Gold reserves could not meet the value of dollars in circulation. Economists' attempts to revitalize Bretton Woods failed. In 1973, the Bretton Woods agreement collapsed—it ceased to exist. The Bretton Woods arrangement failed due to the following reasons:

The system depleted US gold reserves—as more and more US dollars were issued to meet international demand. In the 1960s post-Vietnam War, the US struggled with inflation. Its current account balance was low; thus, the government decided to call off this system. Moreover, this system lacked a proper adjustment mechanism for the balance of payments. There was a deficit balance of payment in the US. Meanwhile, there was a huge demand for the US dollar worldwide, resulting in liquidity issues. The US dollar was the international reserve currency. This caused seigniorage issues for many other nations. Other nations believed that this system provided an undue advantage to the US. USD yielded a higher rate of return when sold internationally and lesser when sold domestically. Finally, in response to inflation and the current account balance deficit, the government declared restrictions on gold-dollar conversions.

Post Bretton Woods breakdown, countries did not need to peg currencies against USD or gold prices. The coins were free to float and fluctuated with the market demand. Central banks regulated the supply of money in their respective countries. However, as a consequence of the Bretton Woods collapse, the world witnessed oil shocks. Countries absorbed expensive oil prices with flexible exchange rates.

11.4 Paper currency Standard Theories of Purchasing-Power Parity Theory

The purchasing-power parity (PPP) theory was elaborated and brought back into use by the Swedish economist Gustav Cassel. To estimate the equilibrium exchange rates at which nations could return to the gold standard after the disruption of international trade and the large changes in relative commodity prices in the various nations caused by World War I.

Types of PPP Theories

1. Absolute version of the PPP theory and
2. A relative version of the PPP theory.

Absolute Purchasing-Power Parity Theory

The absolute purchasing-power parity theory postulates that the equilibrium exchange rate between two currencies is equal to the ratio of the price levels in the two nations. Specifically:

$R = P/P^*$

Where R is the exchange rate or spot rate.

P and P* are the general price level in the home nation and in the foreign nation respectively.

For example, if the price of one bushel of wheat is $1 in the United States and €1 in the European Monetary Union, then the exchange rate between the dollar and the pound should be R = $1/ €1 = 1.

That is, according to the law of one price, a given commodity should have the same price (so that the purchasing power of the two currencies is at parity) in both countries when expressed in terms of the same currency. If the price of one bushel of wheat in terms of dollars were $0.50 in the United States and $1.50 in the European Monetary Union, firms would purchase wheat in the United States and resell it in the European Monetary Union, at a profit. This commodity arbitrage would cause the price of wheat to fall in the European Monetary Union and rise in the United States until the prices were equal, say $1 per bushel, in both economies (in the absence of obstructions to the flow of trade or subsidies and abstracting from transportation costs).This version of the PPP theory can be very misleading. There are several reasons for this.

1. First, it appears to give the exchange rate that equilibrates trade in goods and services while completely disregarding the capital account. Thus, a nation experiencing capital outflows would have a deficit in its balance of payments, while a nation receiving capital inflows would have a surplus if the exchange rate were the one that equilibrated international trade in goods and services.
2. Second, this version of the PPP theory will not even give the exchange rate that equilibrates trade in goods and services because of the existence of many nontraded goods and services. Nontraded goods include products, such as cement and bricks, for which the cost of transportation is too high for them to enter international trade, except perhaps in border areas. Most services, including those of mechanics, hair stylists, family doctors, and many others, also do not enter international trade. International trade tends to equalize the prices of traded goods and services among nations but not the prices of nontraded goods and services. Since the general price level in each nation includes both traded and nontraded commodities, and prices of the latter are not equalized by international trade, the absolute PPP theory will not lead to the exchange rate that equilibrates trade. Furthermore, the absolute PPP theory fails to take into account transportation costs or other obstructions to the free flow of international trade.

As a result, the absolute PPP theory cannot be taken too seriously.

Relative Purchasing-Power Parity Theory

The more refined relative purchasing-power parity theory postulates that the change in the exchange rate over a period of time should be proportional to the relative change in the price levels in the two nations over the same time period. Specifically, if we let the subscript 0 refer to the base period and the subscript 1 to a subsequent period, the relative PPP theory postulates that

$$R_1 = \frac{P_1/P_0}{P^*_1/P^*_0} \cdot R_0$$

Where R1 and R0 are the exchange rates in period 1 and in the base period respectively.

For example, if the general price level does not change in the foreign nation from the base period to period 1 (i.e., P∗ 1/P∗ 0 = 1). But the general price level in the home nation increases by 50 percent.

The relative PPP theory postulates that the exchange rate (defined as the home-currency price of a unit of the foreign nation's currency) should be 50 percent higher (i.e., the home nation's currency should depreciate by 50 percent) in period 1 as compared with the base period. Note that if the

absolute PPP held, the relative PPP would also hold, but when the relative PPP holds, the absolute PPP need not hold.

For example, while the very existence of capital flows, transportation costs, other obstructions to the free flow of international trade, and government intervention policies leads to the rejection of the absolute PPP, only a change in these would lead the relative PPP theory astray.

However, other difficulties remain with the relative PPP theory. One of these results from the fact (pointed out by Balassa and Samuelson in 1964) that the ratio of the price of nontraded to the price of traded goods and services is systematically higher in developed nations than in developing nations. Since the general price index includes the prices of both traded and nontraded goods and services, and prices of the latter are not equalized by international trade but are relatively higher in developed nations. The relative PPP theory will tend to predict overvalued exchange rates for developed nations and undervalued exchange rates for developing nations, with distortions being larger the greater the differences in the levels of development.

Summary

1. The international monetary system is a set of conventions and rules that support cross-border investments, trades, and the reallocation of capital between different countries. These rules define how exchange rates, macroeconomic management, and balance of payments are addressed between nations.
2. The international monetary system, aids countries by loaning them money so they can overcome poverty, and debts. Some countries struggle with inflation which means that there is too much product and no demand for it. The international monetary system is the operating system of the global financial environment. This body comprises investors, multinational companies, and financial institutions.
3. Only a few nations had the resources to survive after two world wars, while others struggled to feed their citizens. In times like these, the United States of America and the United Kingdom started discussing the possibilities and ways to rebuild the world economy after two disastrous wars in the mid-1940s. The United Nations formulated the new international monetary system at the Bretton Woods Conference in Bretton Woods, New Hampshire. The Bretton-woods conference led to the creation of a dollar-based fixed exchange rate system.
4. Paper standard consists of paper money which is unlimited legal tender and token coins of cheap metals. Paper money may be either convertible or inconvertible. Convertible paper money is convertible into gold or silver coins or bullion of specified weight on demand. Paper money is not convertible into coins of a precious metal of bullion now-a-days.
5. Purchasing power parity or PPP refers to a rate at which the currencies of various countries get converted to equalize the purchasing power of distinct currencies by eliminating price levels difference amongst the countries. Its calculation helps to compare the economic wealth and Gross Domestic Product or cost of living of any two countries globally using the basket of goods approach. PPP is a key factor in comparing the GDP of multiple countries. It considers a single price approach meaning all the goods will cost the same in the US dollar.

Keywords

- Purchasing power
- Purchasing power parity
- Bretton woods system
- Gold standard
- Paper currency

Self Assessment

1. Which of the following was NOT a goal of the Bretton Woods system?

A. To promote international trade.

B. To stabilize exchange rates.

C. To create a global central bank.

D. To provide loans to countries experiencing balance of payments problems.

2. The International Monetary System formulates the framework that facilitates

A. the exchange rates

B. international payments

C. movement of capital between two countries

D. All of the above

3. Which of the following is NOT a criticism of the Bretton Woods system?

A. It was too rigid.

B. It was too dependent on the US dollar.

C. It did not do enough to promote economic growth.

D. It did not do enough to help developing countries.

4. What is the Purchasing Power Parity (PPP) theory primarily used for?

A. Predicting future exchange rates

B. Analyzing changes in interest rates

C. Comparing the cost of living between countries

D. Assessing fiscal policy effectiveness

5. According to the PPP theory, exchange rates should adjust to ensure that:

A. Interest rates remain constant

B. Inflation rates are equal across countries

C. Nominal income levels are equal across countries

D. Real exchange rates remain fixed

6. Which form of PPP suggests that changes in exchange rates are driven by differences in price levels between countries?

A. Absolute PPP

B. b. Relative PPP

C. Purchasing Power Parity

D. Nominal PPP

7. Which factor can disrupt the application of PPP theory in the real world?

A. Differences in transportation costs

B. b. Uniform taxation policies

C. Similarities in consumer preferences

D. Equal distribution of resources

8. If a country's actual exchange rate is lower than its PPP exchange rate, what is likely to happen in the long run?

A. The country's currency will appreciate.
B. The country's currency will depreciate.
C. The country will experience hyperinflation.
D. The country's trade balance will worsen.

9. Which of the following is NOT a limitation of the PPP theory?

A. It assumes identical goods and services across countries.
B. b. It ignores differences in transportation costs and trade barriers.
C. It cannot be used to forecast short-term exchange rate movements.
D. It accurately predicts exchange rate movements in all situations.

10. Which of the following are functions of international monetary system?

A. Facilitates the free flow of different currencies in the open market.
B. Restrict intervention from government or central banks only in cases of currency stabilization.
C. Facilitate global trade of goods, services, and money.
D. All of the above

11. What is the paper currency standard?

A. A monetary system where the value of currency is determined by the weight of paper used to print it.
B. A system where currency is backed by physical assets like gold or silver.
C. A system where digital currencies replace physical paper money.
D. A system where currency is printed on high-quality paper for durability.

12. In a paper currency standard system, what is the primary backing for the currency?

A. Gold
B. Silver
C. Government's promise to pay
D. Foreign currencies

13. In a paper currency standard, who has the authority to issue and regulate the currency supply?

A. International organizations like the IMF
B. Central banks of individual countries
C. Commercial banks
D. Currency exchange bureaus

14. Which of the following are merits of paper currency standard?

A. Elastic
B. Economic
C. Price stability
D. All of the above

15. Which of the following are demerits of paper currency standard?

A. Lack of durability

B. Lack of confidence

C. Exchange instability

D. All of the above

Answers for Self Assessment

1.	C	2.	D	3.	C	4.	C	5.	B
6.	A	7.	A	8.	B	9.	D	10.	D
11.	B	12.	C	13.	B	14.	D	15.	D

Review Questions

1. "Examine the limitations and practical challenges of applying the Purchasing Power Parity (PPP) theory in real-world scenarios.
2. Write a detailed note on international monetary system.
3. Discuss the advantages and disadvantages of a paper currency standard.
4. Analyze the strengths and weaknesses of the Bretton Woods system and how it influenced international trade, exchange rates, and economic stability.
5. Critically examine purchasing power parity theory.

Further Reading

1. International Financial Management By Cheol S Eun And Bruce G Resnick, M.G. Hills
2. International Finance Management By Jeff Madura, Cengage Learning

Unit 12: Market for Foreign Exchange

CONTENTS

Objectives

After studying this unit the students will be able to

- Learn about spot market
- Discuss about forward market
- Learn about Asian financial crisis
- Discuss about global financial crisis

Introduction

The foreign exchange market is the world's largest financial market that decides the exchange rate of currencies. Also known as the forex or currency market, it is where different types of currencies are traded. It is an over-the-counter (OTC) market with no central marketplace to facilitate easy trading and establish standards. Foreign exchange, or foreign currency exchange, is an important aspect for any company and people functioning in an international context. It facilitates the exchange of foreign currency into domestic currency and vice versa. Countries must convert foreign currency into domestic currency for utilization in the home country. A nation should deal with all foreign entities on a one-to-one basis, meaning that all imports from a foreign country needs payment in its currency, and all exports needs payment in the other currency. However, it is not practically possible because it requires keeping track of many currency rates and the accompanying payment issues. As a result, most countries select a common currency for trading among themselves.

Foreign Exchange Market: Working

One compares a country's currency with its common currency for international transactions. Trades would take place in this currency, which is the economically dominant currency. As a

result, a country must trade in U.S. dollars or other major currencies such as the Euro, Pound, or Japanese yen. A balance of payment account helps to keep track of a country's external trade.

This account is credited with foreign currency receipts while debited with foreign currency payments. Other factors being constant, a country with a deficit balance of payments will have a weak national currency, and vice versa. Therefore, the demand for foreign currency increases when the country's balance of payment account is in deficit. As a result, their value relative to the home currency rises.

One trades the currencies of different countries in pairs in exchange for each other. As a result, one of the currencies will have a different value than the other. This decides how much currency a country can purchase from another country and vice versa based on supply and demand. The currency markets primary job is to establish this price relationship worldwide. This improves liquidity in all other financial markets, critical for overall stability.

Types of Forex Market

- Spot Market
- Forward Market
- Future Market
- Swap Market
- Options Market

Participants in Forex Market

- International Companies
- Traders
- Central Banks

12.1 International Finance in Practice

International finance is a section of financial economics that deals with the macroeconomic relation between two countries and their monetary transactions. The concepts like interest rate, exchange rate, FDI, FPI, and currency prevailing in the trade come under this type of finance. This concept is growing significantly with the growth of technology and globalization. It helps the company identify various opportunities of managing capital efficiently and effectively. This increases competition in delivering quality goods and services with reduces flaws and cost.

International finance deals with the study of financial transactions between two or more countries which might be related to exchange rates, inflation, foreign direct investment, etc. We live in a globalized world. Every country is dependent on another country by some other means. Developed countries look for a cheap workforce from developing countries, and developing countries look for services and products. When a trade happens between two countries, as in this case, many factors come into the picture and have to be considered during the execution of the business so that no violation of regulation happens. For any economy, international finance is a critical factor; the local government should accordingly execute the policies so that the local players are not facing severe competition from the non-local players. Due to a lot of diversity related to trade, investments, inflation, exchange rate, culture, and so on, this concept can be used as a boon if the respective countries can manage it properly, with transparency and efficiency. Each country can use it for its own benefit as well as development at a global level.

 **Example:** Let us look at some examples of international finance corporation. The Bretton Woods System was suggested in 1944 as the first common negotiated monetary order to facilitate financial transactions among two countries. In the Bretton Woods system, the member countries agreed to take care of their trade transactions across the borders and settle the bill in dollar-denominated bills, which they could exchange for the equivalent of gold. That was the reason for quoting these bills to be "As good as gold." Every currency of the member countries like Canada, EU, Australia, and Japan was pegged against the common universal currency USD. The USA ended this in 1971. The conversion of US dollars to gold was unilaterally terminated. With this, the US and other mixed currencies became floating currencies again. Trump's policies to increase the duty on products from China are another classic real-time example.

Scope: International Finance

As many prospects come into the picture, there is the scope international finance corporation books profit and benefits from each of these prospects accordingly. It is important while determine the exchange rates of the country. One can do this against the commodity or the common currency. It plays a crucial role in investing in foreign debt securities to have a clear idea about the market. The transaction between countries can be significant in assessing the economic conditions of the other country. One can use arbitrage in tax, risk, and price to market imperfection to book good profits while transacting in international trade.

Importance: International Finance

In a growing world moving towards globalization, its importance is growing in magnitude. Every day, the transaction between two countries for trade is scaling up with the supporting factors. It considers the world a single market instead of individual markets and carries out the other procedures. For the same reason, the firms and corporations doing such research include institutions like the International Monetary fund (IMF), International Finance Corp (IFC), and the World Bank. Trade between two foreign countries is one factor in developing the local economy and improving economies of scale. The various sources of international finance like the currency fluctuations, arbitrage, interest rate, trade deficit, and other international macroeconomic factors are crucial in prevailing scenarios. There is a range of options in international trade and finance to raise and manage the capital for the business. The scope of growth for companies concentrating on goals of international finance is significantly higher than for companies that do not. Different currencies and more opportunities to manage the capital involved will improve its financial performance.

The competitiveness improves when international trade is enabled in such markets. These are essential objectives of international finance because the quality of goods and services will improve without much difference in price due to competition. Revenue from international trade can protect the company and not worry about domestic demand as they still need overseas. Due to world-wide cash flows international finance helps to take corrective measures to bad government policies. International finance helps to promote the domestic investment and growth through capital market. It helps in integrate the economy of two nations and easy flow of capitals.

Disadvantages: International Finance

In political turmoil in one country, a stakeholder of international trade affect the other stakeholders of the same business. Depending on other countries' exchange rates is always risky, given that all currencies have significant volatility. One should carefully manage the credit risk because of international trade. Otherwise, it can hamper profitability to a greater extent. It requires the disclosure of sensitive data more than domestic finance; the chance of stolen confidential information is more in global markets. Local players cannot compete with big global players who are resource and research-backed to develop quality products and services which affects the goals of international finance. As more than one culture is involved, cultural differences can damage the brand's reputation if not tackled properly.

 **Example:** International finance is a financial economics section dealing with the macroeconomic relation between two countries and their monetary transactions. Under this, finance involves the concepts such as interest rate, exchange rate, FPI, FDI, and currency. The Bretton Woods system was proposed in 1944 as the first standard negotiated monetary order for financial transactions between two countries. Factors such as inflation rate, diversity in culture and language, and exchange rate, international finance can benefit if adequately managed by the company or become a curse if mismanaged.

12.2 Spot Market

Spot Market, also known as "physical market" or "cash market," is a financial market where financial securities like stocks, currencies, commodities are bought and sold for immediate delivery. Most of the spot market trades are settled or delivered two business days after the trade date (T+2),

but many counterparties opt for settlement 'right now. The settlement price or the rate is called the spot price.

 For example, an investor who wishes to own stocks of a company immediately will buy the stock, which will allow them to own the stocks with immediate effect. WTI or Brent Crude oil is traded at the spot price, but the delivery is done only after a month. Since it is a commodity, the delivery usually takes time. Whereas in the case of stocks, it is delivered immediately once the payment is made and the ownership is transferred.

In the spot market, financial instruments or commodities are traded for cash and delivered at the instant it was sold. A spot market is otherwise called the cash market or physical market, this is a place where a financial instrument is traded, the delivery of financial instruments is made after cash has been paid for the products. A spot trading is different from futures contracts where commodities or financial instruments are delivered at an agreed future date.

Spot Market: Spot Rate

When it comes to currencies, securities, or commodities, the price that is quoted on them for immediate settlement of their trade is referred to as the spot rate or spot price of the commodity. Hence, the spot rate definition is that it is the current market value at the moment of the quote of a particular asset. The value of a spot rate is calibrated upon how much a buyer is willing to pay as well as how much a seller is willing to accept. This usually depends upon a slew of factors such as the current market price, as well as its expected future value. To put it simply, when we define spot rate, it's also necessary to add that it reflects the demand and supply for a certain asset in the market. The current price of financial instruments vary from one market to another, market factors also influence the change in the current price. In a liquid market, for instance, an inflow of orders in the market can cause a change to the spot price.

Component of the Spot Market

The cash market can be either exchange-traded or traded over the counter. It depends on where the trade takes place. Exchange brings together buyers and sellers in one place and facilitates trading. In contrast, an over-the-counter trade happens with a closed group of participants that does not have a central location.

Exchange-Traded: Exchange provides the spot rate at which the securities are traded. Buyers and sellers of financial securities are brought together at a central place in exchange. Trades done via an exchange carry limited risk compared to trades executed over the counter due to the less risk of a counterparty defaulting.

Over Counter: Over the counter, trades are carried out between a limited group of counterparties. Over the counter, trades weigh more risk than trades. The trades executed over the counter are usually traded at the exchange rate.

Examples of Spot Market

John owns a fabric business in New York and is looking for suppliers dealing with good quality fabrics at a competitive rate. He looks upon the internet and finds a Chinese supplier giving almost 40% discount on bulk orders of over $ 10,000. Of course, the payment needs to be made in CNY, and John might save big if the current market rate for USDCNY is high. He checks the current USD CNY rate, which is 7.03, higher than the usual value. But looking at the discount the supplier is giving, John decides to execute a foreign exchange to convert the CNY equivalent of $10,000.

USDCNY = 7.03

Purchase amount = $ 10,000

CNY amount = $ 10,000 * 7.03

CNY Amount= 70,300

The foreign exchange spot transaction settles or is delivered after two days (T+2), and John can make the payment, which allows him 40% savings on his purchase.

Essential Points about Spot Market

Unlike a spot trade, a futures contract gives the investor the obligation to buy or sell the financial security at a pre-agreed price and a future date. Money changes hands later that futures prices demonstrate where part of the market expects the price of an asset to go while the spot price is the price at that moment. Local regulations regulate the physical market. A futures transaction, in which a commodity is expected to be delivered or settled in less than a month, is also part of the cash market. It may have been sold at the spot price, but the ownership is transferred only at a future date, not immediately. The price quoted for a purchase or sale on a spot market is the Spot Price

Advantages of Spot Market

The spot market is more flexible than a futures market since they can be traded on lower volumes (1,000 units). In contrast, a futures market requires higher volumes (usually 100,000 units, except very few instruments). This type of market is quick, and the delivery is usually two days. A spot market is straightforward, unlike a futures market. The physical market facilitates immediate trading with a transfer of funds and ownership quickly. Traders most favour it due to its flexibility and ease of trading rather than the futures market, which can be complicated and time-consuming.

 **Notes:** When security is bought or sold and settled or delivered immediately, it refers to a physical market transaction. Contracts bought or sold in the spot market are immediately effective. A physical market is different from a futures market since the money is exchanged immediately. It allows the immediate transfer of ownership of securities.

12.3 Cross Exchange Rate Quotations

Generally, when a person starts trading in currency, they focus on the US Dollar as it is the most owned currency in the world. However, there are many other currencies and pairs of currencies that you can trade in India. Some of these currencies are the Euro, the Japanese Yen, and the Pound Sterling. Now, the bigger question is how the rate for pair of currencies that do not involve USD is determined. Here comes the Cross Rate but before we understand what it is, let's learn what a cross-currency pair is.

What is a cross-currency pair?

Trading between two currencies happens in the foreign exchange market where one currency is weighed by putting it in pair with another currency. Any currency pair that doesn't involve the dollar is considered a cross-currency pair, also known as currency crosses. The most popular currencies traded are Euro, US Dollar, Japanese Yen, American Dollar, Pound Sterling, New Zealand Dollar, and Canadian Dollar. So, when you trade any of these currencies with one another excluding the US Dollar from the list, you would be trading cross-currency pairs.

Cross Rate…

It is the exchange rate between two currencies that are then valued against a third currency. Usually, the third currency in the said definition is the US Dollar. Cross Rate is used to calculate the exchange rate of the currency pairs whose value is generally not quoted. Some of the examples of cross-pairs for which cross rate is calculated – EUR/GBP, AUD/NZD, and CHF/JPY.

Basics of currency pairing trading

To understand how to calculate cross rates, first need to know everything about the currency pairs in the foreign exchange market. Let's start with base currency and quote currency. Every currency pair consists of two currencies – the base currency is the one on the left, and the one on the right is the quote currency. Generally, the Euro (EUR) or the British Pound (GBP) is always the base currency in every pair it is a part of. However, if EUR and GBP are paired, EUR will be the base currency, not the GBP.

List of a full order of priorities for the base currency

Euro (EUR), British/UK Pound (GBP), Australian Dollar (AUD), New Zealand Dollar (NZD), US Dollar (USD), Canadian Dollar (CAD), Swiss Franc (CHF), Japanese Yen (JPY)

Derivation of a cross exchange rate

As mentioned earlier, a Cross Rate is the exchange rate between two currencies valued against the third. Two transactions take place in this process. How?

When you trade a cross-currency pair, your first transaction would be selling one currency for USD. Once the USD is received, you will use it to buy another currency, making it your second transaction. Clarity about these two types of transactions will help you to understand the derivation of cross exchange rate or Cross Rate. Let us now understand how to calculate currency cross rate. Find the home currency and the foreign currency against which you want to exchange it. Figure out the type of quote for both currencies in a pair. Below-mentioned are two types of quotes:

- Direct Quote
- Indirect Quote

Direct Quote

The direct quote method provides the base currency per quoted currency (i.e., foreign currency). This provides the cost of the local currency to purchase 1 unit of the foreign currency. The nature of the direct quote currency depends upon the location of the transaction concerned and the person concerned. Foreign currency conversion rates could be expressed and presented in two ways, either by direct or indirect quotations.

Indirect quotation method, the Foreign currency amount is fixed, and the domestic currency is variable depending upon the geographical location of where the transaction takes place.

The direct quote currency is usually simple and easy for the consumer to understand as it provides the amount of local money needed for the conversion into the required foreign currency.

So in case the rate of conversion is lower, then it means that the value of the domestic currency is increasing in the market. In contrast, if the conversion rate is higher, the value of a domestic currency decreases in the market.

Direct Quote: Formula

The formula to be used for a direct quote could be shown as follows:

Example: An Indian Company ABC Ltd. needed USD 1200 & it was provided that it will require to convert its INR 84000 for such purpose. Comment on the Direct quote for the company. As ABC Ltd. is an Indian Company and its place of residence is in India, the direct quote will be in the form of "Domestic Currency (i.e., INR) needed for conversion of 1 unit of Foreign Currency (i.e., USD). So, as per the formula, the quote would be;

= Domestic Currency (INR) / Foreign Currency (USD)

= 84000 / 1200

= 70

So, this would be; INR 70 per USD at the time of conversion.

Uses of Direct Quote

Direct quote referencing are often the majorly used way to communicate or present the rate of foreign currency change. But the most frequent usage of this method is when the base currency has more value than the counter currency in the market. To understand this point, let's take an example of citing a direct quote. At a point in time, the Indian currency (INR) needed 72 units to purchase 1

unit of USD. In this case, the statement will be treated as a direct quote as foreign currency (USD) is of the fixed unit with the variable domestic currency (INR). In this scenario, the base currency is USD, which carries more value in the market than the counter currency, INR.

Inverse Quotations

The inverse quotation of the EUR/USD, i.e. the USD/EUR, represents the price in euro of each dollar. For example, the EUR/USD exchange rate of 1.5415 means that the inverse quotation, USD/EUR, corresponds to 0.6487, i.e. the inverse of 1.5415 (1/1.5415). If USD/EUR = 0.6487, each dollar is worth less than one euro, which means that the euro is worth more than the dollar. In this case, it means that in order to obtain one US dollar, it is necessary to deliver 0.6487 euros.

Cross Quotations

A currency may not have direct quotation in all foreign currencies. The calculation of the cross quotation makes it possible to obtain the exchange rate of a currency for which there are no published quotations. Where two different exchange rates are available with a common currency, it is possible to calculate the cross exchange rate.

Cross Quotations: Calculations

If, for example, the EUR/USD and USD/JPY values are available, the value of the EUR/JPY can be calculated as follows:

EUR/USD = 1.5326 means that 1 EUR = 1.5326 USD

USD/JPY = 105.33 means that 1 USD = 105.33 JPY

Hence, EUR 1 = 1.5326 x (JPY 105.33) i.e. 1 EUR = JPY 161.43. Hence, we get the quotation EUR/JPY = 161.43.

Cross-Currency Rate Calculation

Let us assume that we have to convert 1000 Euros to GBP or British Pounds. We will need to calculate the Cross-currency rate for Euro and British Pounds, written as EURGBP. We do not have this value. However, we have the values for EURUSD as 1.04 and USDGBP as 0.82. Hence, to determine the Euro GBP rate, we have to make two-stage calculations.

First, we have to convert 1000 Euros to US Dollars. Second, we have to convert it into British Pounds to arrive at our answer. Hence, 1000 Euros x 1.04 = US$ 1040. Now, we have to calculate how much British Pounds we will get with US$ 1040. We multiply US$ 1040 by 0.82 to arrive at 852.8 British Pounds. Therefore, for every 1000 Euros, we will get 852.8 British Pounds. The EURGBP rate is 0.85. In actual usage, we just have to multiply the values for EURUSD and USDGBP to arrive at our answer. In the above instance, when we multiply 1.04 by 0.82, we get the answer as 0.85 only, which is the value of EURGBP.

Cross-currency rates

Cross-currency rates are an extensive and dynamic area of study. The currency rates keep fluctuating on a daily, even hourly, basis. Traders can take positions on currency pairs that are not frequently traded. This can provide them with an opportunity to earn handsome profits. Also, these rates help to make trade much simpler between different nations of the world, not involving the US. Countries globally tend to specialize in only a few products and manufacture them. They import the other products which they can get at a cheaper price from some other nation rather than making them themselves. A few years ago, a buying nation had to convert its currency into US Dollars to pay for its import. The exporting nation would again convert those US Dollars back to its home currency. However, trade volumes started swelling between countries with the advent of globalization. Subsequently, the need to convert your currency into US Dollars was done away with. Now we can directly trade in cross-currency pairs without involving the US Dollar. This has made international trade much easier and faster between countries not involving the US.

12.4 Forward Market

Forward Market refers to a market that deals in over-the-counter derivative instruments and thereby agrees to take delivery at a set price and time in the future. In addition, the contract can be customized regarding the rate, quantity, and also about date. Unlike the stock, derivatives or commodity market, a forward market is not an exchange but an over-the-counter (OTC) marketplace for foreign exchanges, securities, interest rates and commodities. However, the term

forward market is most often used in relation to the forex market. It is a market where forward contracts are bought and sold for the purpose of hedging (protecting investments) or speculation (maximizing returns). Both forward and future markets in India are regulated by the Forward Markets Commission.

Forward Contract

In a forward contract, two parties agree to buy or sell an asset at a set price in the future. Unlike an options or futures contract, here both the parties in the transaction have the obligation to fulfil the transaction. In option or future contracts, a buyer or seller can sell the contract before the expiration date and close his position. In a forward contract both parties have the obligation to deliver the underlying asset, whether its currency, commodity or any other securities. If you understand what a forward contract is, you should be able to understand what is forward market.

Forward Contract: Working

To understand how a forward contracts works and to understand forward market meaning, it will be useful to know who the participants are in a forward market. Forward contracts are primarily used by hedgers to offset losses and speculators to profit from price fluctuations. Hedgers use the forward market to protect themselves from losses if the price of their products goes against their favour in the market. On the other hand, speculators are not keen to take possession of the commodity or currency but want to make gains by placing bets on price direction. Generally, forward contracts are used more by hedgers than speculators.

Example: Forward contract

Assume that you are a farmer who plans to harvest 10 tons of wheat next year. You know that you have to sell the wheat at Rs. 5,000 per ton to make a profit. Now, you have two options: You can either choose to do nothing and hope that your produce will fetch Rs. 5,000 when you sell it or lock in the prices for the future. For that you may enter into a forward contract with a flour mill owner or a flour marketing company to sell wheat at Rs. 5,000 per ton after the harvest. In this way, you have protected yourself from the risk of decline in wheat prices.

In the same way, the flour mill owner can also enter into a contract to lock prices so that he wouldn't have to pay more for wheat after the harvest.

1. Classification of Forward Market

2. Closed Outright Forward: Under this type of contract, the exchange rate is fixed between the two parties upon an agreement as per the prevailing spot rate plus the premium.
3. Flexible Forward: Under this method, the parties can tend to exchange funds, usually on or even before the maturity date.
4. Long Dated Forward: They are similar to the short-dated contracts, except that the maturities are usually for distant dates
5. Non-Deliverable Forward: Under this method, there is no physical delivery except that the parties agree to settle only the difference between the spot rate and the exchange rate.

Forward Market: Features

1. In this market, trading is done by telephone, where participants directly deal with the broker-dealers.
2. The private parties negotiate the contract terms and are dealt with on a principal-to-principal basis.
3. Most transactions are delivery based.
4. Usually, the products are OTC based and are customizable in quantity, delivery dates, and price.
5. It is generally not regulated by anybody.

Forward Market: Importance

1. It helps the parties to the contract to fix the future price at which a particular underlying will be exchanged.

2. It helps the individual or corporation to hedge against uncertainties in the future.
3. It helps individuals who look for customization in their contracts and do not want to deal directly with the future market where there is standardization for each contract or the underlying product.
4. It also helps certain corporations to hedge their FX exposure when there are payments to be received/paid in the future.

Forward contracts executed through the forward market are very simple forms of derivatives that even people without prior experience in trading can understand. Forward contracts allows participants to trade in a host of commodities, such as natural gas, oil, electricity, orange juice, grain, precious metals and forex or foreign currency.

Forward Market vs. Futures Market

Forward markets usually deal with OTC products, whereas futures markets deal with products on exchanges. Forward markets have the terms negotiable among the parties regarding the contract size and date of delivery, whereas futures contracts are more standardized. Forward markets usually have physical delivery, whereas a futures contract is cash-settled.

Forward Market: Benefits

1. Offers complete hedge: Whenever a certain seller has certain commodities to exchange in the future for which the price is uncertain, or there happens to be an exporter who wishes to lock in the exchange rate at which the payment must be received, he may do so in the forward market by entering into such contracts. Such contracts, therefore, happen to provide a complete hedge and try the maximum to go on to avoid such uncertainties so that parties are assured of the payment rates.
2. Customization: At times, one party may not be willing to enter into such contracts through futures as the terms and conditions of the contract are well stated and standardized. Only forward markets provide such flexibility to customize the forward contracts. At their own will, the parties may decide on the quantity, time, and rate at the delivery time as per their needs and specifications.
3. Matching of exposure: Owing to the feature of flexibility and customization, the parties can now match their exposure with the time frame of the period they decide to enter into the contract. If the horizon happens to be for two months rather than the standard of 3 months in the futures contract, the parties can enter into such contracts as per their will so that their exposure is hedged following their time frame.
4. Over-the-counter products: The products generally tend to be dealt with over the counter. Thus, due to their flexibility, huge institutional investors such as hedge funds prefer to deal with them rather than enter into a standardized futures contract. The counter products allow them the flexibility to suit their strategy, duration, and contract size per their needs and requirements.

Forward Market: Limitations

1. Difficulty in cancellation: At times, the contract, once entered into, may not be cancelled, and sometimes the parties often do default as they are not so regulated, unlike the futures contract
2. Difficulty in finding a counterparty: Since they are OTC products at certain times, there may be difficulty in finding a similar counterparty to contract with for the forward contract

 **Notes:** Forwards, a powerful financial instrument acts as a derivative so that the underlying exposure is fully hedged and stands as an outstanding tool to achieve the required protection.

Thanks to their feature of customization to suit the needs and requirements of the counterparties to the contract, they are a preferred favourite to deal with in the forward market as they can very well be tailor-made to suit the parties' requirements.

12.5 The Asian Financial Crisis

In an increasingly globalizing world, management of economies is confronted with new challenges. This is being amply demonstrated by the financial and economic crisis that is being faced by a number of Asian countries, who, till recently, had the distinction of being amongst the world's fastest growing economies. The crisis which started with the devaluation of Thailand's currency in the summer of 1997 quickly spread to other countries of South East and East Asia. Although at first sight it may appear to be a financial or debt crisis, it has deeper roots in the structures of the economies, and changes in their competitiveness. After years (or in some cases, decades) of extraordinarily high growth, most countries of South East and East Asia started facing declining export growth and growth of the overall economy in the second half of 1996. In the face of mounting current account deficits, it was no longer realistic to continue with currencies pegged to the US Dollar at fixed exchange rates.

As the currencies were devalued the burden of external debt (which had to be repaid in US Dollars, and no precaution had been taken against possible devaluation of the currencies) suddenly increased very substantially. Moreover, a large part of the borrowed money had gone into relatively less productive sectors (e.g., real estate) or sectors with doubtful economic viability. With declines in competitiveness, such investments were no longer capable of generating adequate returns needed for repaying the loans. The additional fact that much of this debt is short-term in nature added to the crisis. And with devaluation started capital flight on a massive scale.

Confronted with the situation outlined above, it was Thailand who first adopted an IMF supported bailout plan. Indonesia followed suit. And after some initial hesitation, the Republic of Korea, the newest member of the club of developed countries, had to approach the IMF for help.

The package offered by the IMF is the familiar one of loans associated with the conditionality of stabilization involving austerity and financial sector reforms. In Indonesia, the amount pledged was US$43 billion and the reforms required range from cuts in subsidies and other expenditures, increases in taxes, dismantling of monopolies, to banking and financial sector reforms. All these measures are bound to have a far-reaching impact on the economy. Turmoil in the banking and financial sector has brought a number of economic. The short-term impact of austerity measures like budget cuts and increased taxes will be a slowdown of the economy. It should be clear from the above that what appears to be a financial crisis started from deeper economic malaise, and is almost certain to lead to further economic problems. And there are important social dimensions to such problems. These social dimensions include employment, incomes and living standards of the poorer and vulnerable segments of the society, and social protection of the workers. The employment situation is being adversely affected in at least two ways:

a. retrenchment of workers from economic activities directly affected by the crisis (e.g., the financial sector, construction, and trade); and
b. slowdown in growth of employment due to a slowdown in economic growth.

The pre-Crisis Situation: Growth, Employment and Poverty

Indonesia has achieved remarkable success in economic development over the past decade and a half. While the GDP growth during 1980-90 was 6.1 per cent per annum, it went up to 7.6 per cent per annum during 1990-95 and 7.8 per cent in 1996. This consistently high growth has been associated with impressive diversification of the economy. Strong performance of the manufacturing sector which grew at a rate of 10 per cent per annum between 1985-95 and accounted for a quarter of the nation's GDP. Indonesian exports now consist of a wide range of manufactures including textiles and apparel, wood products, and petrochemicals. The growth of merchandise exports averaged nearly 15 per cent during 1986-93, but declined thereafter. In 1996, the growth rate was 8.8 per cent. Indonesia's gross investment rate went up from 24 per cent of the GDP in 1980 to 32 per cent in 1996. Domestic savings have also grown, and Indonesia continued to finance about 90 per cent of its investment domestically. In 1996, the domestic savings rate was 31 per cent of the GDP. (World Bank, 1997.) On the employment front, the performance has been less impressive. While there has been a significant shift in the sectoral composition of employment. The

growth of employment has lagged behind that of labour force. During 1985-95, the rate of employment growth had been 2.3 per cent per annum compared to a labour force growth of 3.1 per cent. Indeed, employment growth declined from 2.8 per cent per annum during 1985-90 to 1.8 per cent during 1990-95. The rate of open unemployment jumped from 3.2 per cent in 1990 to 7.0 per cent in 1995.

In the area of poverty reduction, the performance of Indonesia has been quite impressive. In two decades during 1976-96, the incidence of absolute poverty i.e., the percentage of population below the 'poverty line' declined from 40.08 per cent to 11.34 per cent. The economy of Indonesia started showing signs of strain already in 1996 when export growth slowed down to below nine per cent from an average of nearly 15 per cent during 1986-93. GDP growth started slowing down in 1997. From nearly eight per cent in 1996 growth in the first quarter of 1997 came down to less than seven per cent, and to below six per cent in the second quarter. The growth rate for 1997 as a whole is now estimated at less than five per cent. A severe drought during the year adversely affected agriculture; the estimated production of rice (the staple food in Indonesia) was four per cent less than that in 1996. As a result, the country had to start import of food grains after years of self-sufficiency. The worst forest fires in more than a decade also affected agriculture (as well as tourism).

The financial crisis hit the Indonesian economy at a time when it was already facing dwindling exports, a slowdown in overall growth, and sharply reduced rice production leading to imports of rice and prospects of a sharp increase in food prices.

Asian Financial Crisis: Beginning

The severity of the Asian financial crisis surprised virtually all observers. The Economies of Korea, Thailand, Indonesia and Malaysia had for many years been "miracles', with average annual growth rates since 1970 ranging from 6.9 percent in in Indonesia to 8.4 percent in Korea. The transformation of these economies from poor, largely rural less developed countries to middle income emerging markets. Following the Thai baht's devaluation in mid 1997, the region entered severe economic crisis. Growth was negative in 1998 in most countries in the region, and for the hardest hit, the recession was the deepest since World War II. Estimates suggest that real GDP declined in 1998 by 13.7% in Indonesia, 9.4% in Thailand, 6.7% in Malaysia, and 5.8% in Korea (IMF, Working Paper, 1999).

Asian Financial Crisis: Causes

According to the fundamentalist view the Asian Crisis was caused by basic economic weaknesses. Proponents of this view argue that Asia's healthy macroeconomic indicators- low inflation, fiscal balance, low stock of the govt debt, high rates of domestic saving and investment- painted a misleading picture. In reality Asia's economies suffered from serious structural problems as well as policy inconsistencies.

Fundamentalist pointed out that the warning signals was existed: for example, in Thailand the current account deficit was dangerously large and rising fast. Many Asian govt provided implicit guarantees to the banking system, which often engaged in lending practices that favoured financially unqualified borrowers. By contrast, the panic interpretation views the self- fulfilling pessimism of international lenders as the root cause of the crisis. The most sophisticated version of this argument interprets Asia's crisis as a classic bank run. In Indonesia, Korea and Thailand short term external debt exceeded international reserves immediately before the crisis. If, for instance, a large proportion of a country's debt is denominated in foreign currency and is of short maturity, as it was in much of Asia, the risk of a crisis arises.

Domestic Financial Vulnerabilities

The Asian crisis countries experienced tremendous capital inflows in the 1990s, ranging from some 3% of GDP in Korea and about 10% in Malaysia on sustained basis. Most of these capital inflows, and associated investment booms, were intermediated through weak domestic financial institutions that were often undercapitalized and poorly regulated.

External Vulnerability

An important counterpart to domestic financial fragility in some countries was external vulnerability. Several countries, notably Korea, Indonesia and Thailand, and to some extent the Philippines built up the high levels of short-term external debt relative to reserves. In Korea,

regulations favoured short term foreign borrowing by financial institutions and strongly discouraged corporations from borrowing abroad directly.

Changes in the External Environment

In addition to their own vulnerabilities and, in some countries, the dynamic of deteriorating macroeconomic and financial situations, some countries suffered external shocks prior to the crisis. Perhaps the major development in the external environment that helped create the conditions for the crises of 1997 was the surge of capital inflows in the 1990s. From the discussion, it is clear that weak and deteriorating fundamentals and violent reactions in capital markets were both important. The Thai crisis was predictable on the basis of a variety of macroeconomic and microeconomic weaknesses. The other countries clearly suffered from the spillover from Thailand.

Weaknesses in the domestic financial systems were a key reason for the virulence with which the crisis spread.

The undercapitalized financial system characterised by over leverage and large property sector loans were extremely vulnerable to an increase in interest rates, severely restricting the ability of the authorities to conduct an interest rate defence of the exchange rate.

12.6 The Global Financial Crisis

The global financial crisis (GFC) refers to the period of extreme stress in global financial markets and banking systems between mid-2007 and early 2009. During the global financial crisis, a downturn in the US housing market was a catalyst for a financial crisis that spread from the United States to the rest of the world through linkages in the global financial system. Many banks around the world incurred large losses and relied on government support to avoid bankruptcy. Millions of people lost their jobs as the major advanced economies experienced their deepest recessions since the Great Depression in the 1930s. Recovery from the crisis was also much slower than past recessions that were not associated with a financial crisis.

The Global Financial Crisis: Origins

- Excessive leverage in financial economics
- Monetary Policy ease (2003-05).
- Underestimated risk in financial markets
- Failures of corporate governance
- Stock market bubble.
- China's growth
- Oil price spike (2007-06).
- Housing Bubble:
- Households saving too little, borrowing too much.
- Housing crash
- Low national saving
- Federal budget deficits
- Foreign debt
- Lower long-term economic growth.

It was "Lehman Weekend". The moment in September 2008 when the 150-year-old investment bank Lehman Brothers collapsed, precipitating the worst global economic crisis since the 1930s. The East Asian crisis of 1997 caused a rethink on full capital account convertibility and fixed exchange rates. The Internet bubble and bust of the early 2000s led many to question the impact of new technology on long-term productivity growth.

The financial crisis was caused by a number of factors. However, in simple terms we can say, the crisis was caused by banks being incentivized by deregulation to make risky home loans, which were then repackaged as overvalued and overrated assets, which were then speculated on by banks and investors causing "a speculative bubble".

The Global Financial Crisis: Causes

From 2005 to 2007, at the height of the real estate bubble, when mortgages were given to many homebuyers who could not afford them, and then packaged into securities and sold off. This failure manifested itself in several ways.

One, banks were allowed extraordinarily high levels of debt in relation to equity capital.

Two, banks in the advanced economies moved away from the business of making loans to investing their funds instead in complex assets called "securitised" assets. The securitised assets consisted of bundles of securities derived from sub-prime loans, that is, housing loans of relatively higher risk. As housing prices started falling and the securitised assets lost value, it translated into enormous losses for banks. Payment defaults triggered massive declines in banks and real-estate incomes. Lehman Brothers declared bankruptcy in 2008.

Sub-Prime Loan

Sub-prime refers to a loan given to a borrower, who does not qualify for a regular home loan because of a poor credit record, low income and lack of job security. The banks gave the loans with the expectation that the value of the underlying security or property will go up. They increased the mortgage interest rate, higher than the conventional loan and called it a sub-prime mortgage. They could earn more with the higher mortgage interest rate and if the borrowers discontinued repayment, they could sell the property for a higher consideration due to appreciation in the property prices.

The Global Financial Crisis: Causes

Excessive risk-taking in a favourable macroeconomic environment: In the years leading up to the GFC, economic conditions in the United States and other countries were favourable. Economic growth was strong and stable, and rates of inflation, unemployment, and interest were relatively low. In this environment, house prices grew strongly. Competition increased between individual lenders to extend ever-larger amounts of housing loans that, because of the good economic environment, seemed to be very profitable at the time. Many lenders providing housing loans did not closely assess borrowers' abilities to make loan repayments. This also reflected the widespread presumption that favourable conditions would continue. Investors who purchased (mortgage-backed securities) MBS products mistakenly thought that they were buying a very low-risk asset: even if some mortgage loans in the package were not repaid, it was assumed that most loans would continue to be repaid. These investors included large US banks, as well as foreign banks from Europe and other economies that sought higher returns than could be achieved in their local markets. Increased borrowing by Banks and Investors: In the lead up to the GFC, banks and other investors in the United States and abroad borrowed increasing amounts to expand their lending and purchase MBS products. Borrowing money to purchase an asset (known as an increase in leverage) magnifies potential profits but also magnifies potential losses. As a result, when house prices began to fall, banks and investors incurred large losses because they had borrowed so much. Additionally, banks and some investors increasingly borrowed money for very short periods, including overnight, to purchase assets that could not be sold quickly. Consequently, they became increasingly reliant on lenders – which included other banks – extending new loans as existing short-term loans were repaid

Regulation and Policy errors:

Regulation of subprime lending and MBS products was too lax. In particular, there was insufficient regulation of the institutions that created and sold the complex and opaque MBS to investors. Not only were many individual borrowers provided with loans so large that they were unlikely to be able to repay them, but fraud was increasingly common – such as overstating a borrower's income and over-promising investors on the safety of the MBS products they were being sold.

How the GFC Unfolded?

US house prices fell, borrowers missed repayments: The catalysts for the GFC were falling US house prices and a rising number of borrowers unable to repay their loans. House prices in the United States peaked around mid-2006, coinciding with a rapidly rising supply of newly built houses in some areas. As house prices began to fall, the share of borrowers who failed to make their loan repayments began to rise. Loan repayments were particularly sensitive to house prices in the United States because the proportion of US households (both owner-occupiers and investors) with large debts had risen a lot during the boom and was higher than in other countries.

Stresses in the financial system: Stresses in the financial system first emerged clearly around mid-2007. Some lenders and investors began to incur large losses because many of the houses they repossessed after the borrowers missed repayments could only be sold at prices below the loan balance. Relatedly, investors became less willing to purchase MBS products and were actively trying to sell their holdings. As a result, MBS prices declined, which reduced the value of MBS and thus the net worth of MBS investors. In turn, investors who had purchased MBS with short-term loans found it much more difficult to roll over these loans, which further exacerbated MBS selling and declines in

Spillovers to other countries: Foreign banks were active participants in the US housing market during the boom, including purchasing MBS (with short-term US dollar funding). US banks also had substantial operations in other countries. These interconnections provided a channel for the problems in the US housing market to spill over to financial systems and economies in other countries.

Failure of financial firms, panic in financial markets: Financial stresses peaked following the failure of the US financial firm Lehman Brothers in September 2008. Together with the failure or near failure of a range of other financial firms around that time, this triggered a panic in financial markets globally.

Summary

The foreign exchange market is the world's largest financial market that decides the exchange rate of currencies. Also known as the forex or currency market, it is where different types of currencies are traded.

1. International finance is a section of financial economics that deals with the macro-economic relation between two countries and their monetary transactions. The concepts like interest rate, exchange rate, FDI, FPI, and currency prevailing in the trade come under this type of finance. This concept is growing significantly with the growth of technology and globalization.
2. In a growing world moving towards globalization, importance of international finance is growing in magnitude. Every day, the transaction between two countries for trade is scaling up with the supporting factors. It considers the world a single market instead of individual markets and carries out the other procedures. For the same reason, the firms and corporations doing such research include institutions like the International Monetary fund (IMF), International Finance Corp (IFC), and the World Bank.
3. Trading between two currencies happens in the foreign exchange market where one currency is weighed by putting it in pair with another currency. Any currency pair that doesn't involve the dollar is considered a cross-currency pair, also known as currency crosses.
4. The direct quote method provides the base currency per quoted currency (i.e., foreign currency). This provides the cost of the local currency to purchase 1 unit of the foreign currency.
5. The global financial crisis (GFC) refers to the period of extreme stress in global financial markets and banking systems between mid-2007 and early 2009. During the global financial crisis, a downturn in the US housing market was a catalyst for a financial crisis that spread from the United States to the rest of the world through linkages in the global financial system.

Keywords

- Direct quote
- Indirect quote
- Global financial crisis
- Asian financial crisis

- Cross rate

Self Assessment

1. Which of the following are participants in foreign exchange market?

A. International Companies
B. Traders
C. Central Banks
D. All of the above

2. What is the primary purpose of the foreign exchange market?

A. To facilitate international trade
B. To generate profits for central banks
C. To control inflation rates
D. To regulate domestic interest rates

3. Which of the following is NOT a major participant in the foreign exchange market?

A. Commercial banks
B. Central banks
C. Stock exchanges
D. Multinational corporations

4. Which of the following are features of forward market?

A. trading is done by telephone
B. The private parties negotiate the contract terms and are dealt with on a principal-to-principal basis.
C. Most transactions are delivery based.
D. All of the above

5. Which of the following is not a type of foreign exchange market?

A. Spot market
B. Forward market
C. Money market
D. Future market

6. Spot Market, also known as "physical market" or "cash market," is a financial market where financial securities like stocks, currencies, commodities are bought and sold for immediate delivery.

A. True
B. False

7. What is the key difference between the spot market and the futures market?

A. The spot market involves physical delivery, while the futures market involves cash settlement.
B. The spot market allows for trading based on future price expectations, while the futures market is for immediate transactions.
C. The spot market operates 24/7, while the futures market has fixed trading hours.

D. The spot market is only accessible to accredited investors

.

8. What is the main purpose of the spot market for commodities like oil and gold?

A. To provide a platform for long-term investment in these commodities.

B. To facilitate price speculation and trading with leverage.

C. To ensure a stable supply of these essential commodities.

D. To allow producers to sell their future production.

9. Which financial instrument is most commonly associated with the spot market?

A. Stock options

B. Forward contracts

C. Spot contracts

D. Derivatives

10. Which of the following is NOT a feature of a forward contract?

A. It is a private contract between two parties.

B. It is standardized.

C. It is traded on an exchange.

D. It is used to hedge against price risk.

11. Which of the following is a benefit of using forward contracts?

A. To reduce price risk

B. To increase liquidity

C. To speculate on prices

D. All of the above

12. What was the primary cause of the global financial crisis of 2007-2008?

A. The collapse of the US housing market

B. The subprime mortgage crisis

C. The failure of major financial institutions

D. All of the above

13. Which of the following are considered to be the main contributing factors to the global financial crisis?

A. Deregulation of the financial sector

B. Risky lending practices by banks

C. The growth of complex financial products, such as derivatives

D. All of the above

14. What was the impact of the global financial crisis on the global economy?

A. A severe recession

B. A sharp increase in unemployment

C. A decline in global trade

D. All of the above

15. What are some of the lessons that can be learned from the global financial crisis?

A. The importance of financial regulation
B. The need for greater transparency and accountability in the financial sector
C. The importance of diversifying risk
D. All of the above

Answers for Self Assessment

1.	D	2.	A	3.	C	4.	D	5.	C
6.	A	7.	C	8.	C	9.	C	10.	B
11.	D	12.	D	13.	D	14.	D	15.	D

Review Questions

1. Write a detailed note on international finance.
2. Critically examine spot market.
3. Critically examine forward market.
4. Critically examine the global financial crisis.
5. Critically examine Asian financial crisis.

Further Reading

1. International Financial Management By Cheol S Eun And Bruce G Resnick, M.G. Hills
2. International Finance Management By Jeff Madura, Cengage Learning

Unit 13: International Capital Structure and Cost of Capital

CONTENTS

Objective

After studying this unit the students will be able to

- Learn About factors effecting capital Structure
- Discuss about the cost of capital
- Learn about cross border listing of stocks

Introduction

Capital Structure is the combination of capital from different sources of finance. The capital of a company consists of equity shares holders' funds, preference share capital, and long-term external debts. The source and quantum of capital are decided to keep in mind the following factors:

Capital: Capital structure should be designed in such a manner that existing shareholders continue to hold majority stock.

Risk: Capital structure should be designed in such a manner that the financial risk of the company does not increase beyond tolerable limits.

Cost: the overall cost of capital remains minimal. Particularly it is difficult to achieve all of the listed three goals together hence a finance manager has to make a balance among these three objectives. However, the objective of a company is to maximise the value of the company and it is a prime objective while deciding the optimal capital structure.

Capital structure decision refers to deciding the forms of financing and their relative proportions in total capitalisation. Capital structure will decide the weight of debt and equity and ultimately overall cost of capital as well as the value of the firm. So capital structure is relevant in maximizing the value of the firm and minimising the overall cost of capital. Whenever funds are to be raised to finance investments, capital structure decision is involved. A demand for raising funds generates a new capital structure since a decision has to be made as to the quantity and forms of financing.

Factors Affecting Capital Structure

1. The use of long-term fixed interest-bearing debt and preference share capital along with equity share capital is called financial leverage or trading on equity. The use of long-term debt increases the earnings per share if the firm yields a return higher than the cost of debt.
2. The earnings per share also increase with the use of preference share capital but due to the fact that interest is allowed to be deducted while computing tax, the leverage impact of debt is much more. However, leverage can operate adversely also if the rate of interest on the long-term loan is more that the expected rate of earnings of the firm.
3. The capital structure of a firm is highly influenced by the growth and stability of its sales. If the sales of a firm are expected to remain fairly stable, it can raise a higher level of debt. Stability of sales ensures that the firm will not face any difficulty in meeting its fixed commitments of interest repayments of debt. Similarly, the rate of growth in sales also affects the capital structure decisions. Usually, the greater the rate of growth in sales, the greater the use of debt in the financing of firms.
4. Cost Principle: According to this principle, an ideal pattern or capital structure is one that minimises the cost of capital structure and maximises earnings per share (EPS).
5. Risk Principle: According to this principle, reliance is placed more on common equity for financing capital requirements than excessive use of debt. The use of more and more debt means higher commitment in the form of interest payout. This would lead to the erosion of shareholders' value in unfavourable business situations. With the increase in the amount of Debt, financial risk increases and vice versa.
6. Control Principle: While designing a capital structure, the finance manager may also keep in mind that existing management control and ownership remains undistributed. Issue of new equity will dilute existing control pattern and also it involves higher cost. Issue of more debt causes no dilution in control, but causes a higher degree of financial risk.
7. Flexibility Principle: By flexibility it means that the management chooses such a combination of sources of financing which it finds easier to adjust according to changes in need of funds in future too. While debt could be interchanged but the same option may not be available in case of equity investment.
8. Other Consideration: Besides the listed principles, other factors such as nature of industry, timing of issues and competition in the industry should also be considered.

13.1 Cost of Capital

Cost of capital is the minimum rate of return or profit a company must earn before generating value. It is calculated by a business accounting department to determine financial risk and whether an investment is justified. Cost of capital is a method of accounting for the returns on an investment that helps an investor to offset the costs. The cost of capital is a way to measure the returns and investment risks to expand or facilitate business operations. A business may incur this cost from its profits, debt, or equity financing. If a business has availed of debt and equity financing to expand its operations, the overall cost of capital is measurable by the weighted average cost of capital (WACC). Accounting and justifying the costs of capital expenditure also evaluate returns for the investors by identifying risks and opportunities. Thus, minimizing risks and seizing opportunities will ensure the future growth of the business and generate higher profits. Consequently, a healthy investment will generate increasing returns for its investors that exceed the costs of capital employed. When considering the case of stocks or equity shares, it becomes necessary for an investor to substantiate the cost of capital for equity with higher returns. Therefore, an investor will first identify the volatile factors that can bring down his earnings, like a company's financial position. Simultaneously he will restructure his portfolio to avoid losses.

Thus, they assess a company's loss-making or poor-performing stocks or shares to offset the lower returns. Consequently, they divert their money to acquire other high-yielding shares or investments to offset the lower returns. For optimization of returns and to justify capital investments into a

project, its investors should ensure sustainable business practices. Additionally, good credit ratings and rigorous business accounting methods give management, shareholders, and other investors an accurate picture. As a result, higher returns will neutralize the high project costs, and business operations will continue to generate higher profits.

Determination of Cost Capital

A basic way to estimate the costs of employing a capital investment is to determine the breakeven point. It is when a company generates revenue for an investment higher than the cost incurred or the amount of capital invested. A business also calculates the breakeven point for investments in a project, its product line, subsidiary, etc. However, in the case of borrowings of a company, the weighted average cost of capital formula is determined by debt and equity sell-out. Therefore, the WACC determines the weighted average of all types of debt and equities of a business on its balance sheet.

Calculation of Cost of Capital

Let us look at the formula of cost of capital to estimate returns on different kinds of investments or borrowings

Determining the Cost of Debt

$$\text{Cost of Debt} = \frac{\text{Net Average of Interest Payable}}{\text{Total Debt Value}} \times (1 - \text{Tax Rate})$$

Determining the Cost of Equity –

The cost of capital for equity is much more volatile (represented as 'X') than the cost of debt. It is because the demand and supply market forces play a greater role in determining investors' returns. Thus,

Cost of Equity= R1 + X(R2)

R1 = Risk-free rate of Returns

R2 = Market rate of Returns

Weighted Average Cost of Capital (WACC) – The weighted average COC (WACC) is a company's overall debt and equity capital cost. The company pays this premium to its investors as a reward for the risks undertaken. Its calculation involves,

$$= \{C(E) \times \frac{\text{Percentage of capital in equity}}{\text{Total debt and capital equity}}\} + \{C(D) \times \frac{\text{Percentage of capital in debt}}{\text{Total debt and capital equity}}\}$$

C(E) =cost of equity & C(D) is the cost of debt (after tax).

Let us look at the cost of capital example to understand capital investment implications for a business and its investors,

Example: For instance, Joe owns a coffee chain – Coffee Brew and Churros (CB&C), that generates $10,000,000 annually from all its chains. The business valuation of CB&B is $7.5 million, and $2.5 million are its operating expenses. Thus, the market capitalization of its stock holdings drives its business value and book value. Here, CB&B pays its cost of debt and equity capital from its earnings i.e., $7.5million, and recovers this cost through profiting business operations from all its chains. Thus, a successful capital structure of CB&B allows it to yield an increasing rate of returns year on year for its investors. Thus, over the years, CB&B has evolved a balanced capital budgeting system having a multiplier effect on its earnings and cash flow, making it a zero-risk on returns type of investment for its investors. Subsequently, the enhanced trust and confidence have also led its investors not to demand a risk premium or a higher rate of return than normal.

Importance

It helps determine the discount rate for the company's current cash flows. As a result, this facilitates the planning and executing of future operations and projects to continue generating profits. It helps businesses or companies lower capital supply costs by determining the best combination of capital structures. For instance, a start-up might get a lower price on equity borrowings than through debt. On the other hand, a strategic and well-planned capital structure can help the company save cash flows as interest payments are tax deductible and help a company to reduce its taxable income. Ultimately, well-maintained accounts for the debt and equity costs allow investors to be more accurate about future returns, thus building greater trust in the company or business.

Notes: Beyond the cost of capital's role in capital structure, it indicates an organization's financial health and informs business decisions. When determining an opportunity's potential expense, the cost of capital helps companies evaluate the progress of ongoing projects by comparing their statuses against their costs. Shareholders and business leaders analyze cost of capital regularly to ensure they make smart, timely financial decisions. In an ideal world, businesses balance financing while limiting cost of capital. Cost of capital enables business leaders to justify and garner support for proposed ideas, decisions, and strategies. Stakeholders only back ideas that add value to their companies, so it's essential to articulate how yours can help achieve that end.

13.2 Cross-Border Listing of Stocks

The structure of global equity markets has changed considerably over the past few decades as technological progress and the liberalization of capital flows have lowered the barriers that insulated national markets from each other. However, while investors can now access foreign capital markets more easily, geography has not become irrelevant. Obstacles to international capital flows, such as legal restrictions on capital mobility and foreign ownership, the costs associated with trading and acquiring information on firms listed abroad, and concerns over investor protection in certain foreign jurisdictions, still exist.

The segmentation of markets that results from these barriers creates incentives for corporate managers to adopt financial policies such as international cross-listing, whereby a firm lists its shares for trading on at least two stock exchanges located in different countries. Although prevailing political attitudes on internationalism may ebb and flow around the world, on the whole, the footprint of globalization is well established. From technology to trade, from communications to currency, the world is more interconnected than ever before. Capital markets are no exception, as companies regularly look beyond their own borders for capital-raising opportunities. Companies can access the world's capital markets in various ways. Through a cross-border listing, a company can reach beyond its home jurisdiction to identify a foreign stock exchange that meets its particular corporate financing needs. Companies have a wide range of stock exchanges to choose from, from major global finance hubs to other international listing venues that are well-placed to address financing needs for particular industries.

In other cases, a company may choose to list in its home jurisdiction, while still accessing capital from a deeper pool of investors around the world. A company conducting a public offering and listing in its home jurisdiction often simultaneously seeks to raise capital overseas through private placements to institutional investors in multiple jurisdictions. Cross-listing is a common practice among many multinational companies. Whenever a company launches an IPO (goes public by listing its shares on the stock exchange), the domestic stock exchange is the first choice. A domestic stock exchange is located in the same country as the firm. So, when a company explores other exchanges beyond the domestic stock exchange, it is called cross-listing.

Factors for Cross Listing

A company may choose to maintain a domestic listing and/or one or more foreign listings as it weighs the following factors:

Ability to satisfy listing requirements: Most exchanges have listing requirements dealing with financial track record or assets, minimum number of shareholders, public float, minimum share price, and capitalization. Depending on a company's operational stage, qualifying to list on certain exchanges can be easier than on others.

Amount of capital required: Some exchanges are better placed to deal with large capital raisings due to the size and level of liquidity in that market, while others may offer a more efficient means to raise smaller amounts of capital in a more timely manner. In addition, some exchanges offer more flexible requirements for already-listed companies to raise additional capital, including allowing flexibility in structuring and size of placements.

Visibility: A company with major markets or customers in a particular jurisdiction may find it helpful to establish visibility and brand recognition by listing or raising capital in that jurisdiction. A company may also seek to increase its overall prominence worldwide, which could factor into the cross-border capital raising decision.

Market participants: Different exchanges could have market participants with different levels of understanding of the company's business. Investment banks and other market participants with a deep pool of research analysts and other investment professionals can help drive a successful capital raising and a strong aftermarket.

Timing: Executing a capital raising at the right time in the right market is an important factor many companies consider, particularly during times of significant market volatility.

 For example, a company whose home jurisdiction is facing troubling economic and market conditions may reap greater benefits by listing and/or raising capital abroad to meet its financial needs at that particular time.

Ongoing regulatory requirements. Ongoing exchange or securities regulator requirements, such as financial and other market disclosure reporting, may be more stringent on certain exchanges or in certain jurisdictions than others, which can result in significant compliance costs. It is important for a company to determine early on whether it will be able to meet all ongoing regulatory obligations for a chosen exchange.

Practical tips for a successful listing

Regardless of the stock exchanges considered for a listing, a company can increase its chances of success by following these practical tips.

Prioritize your goals for the listing: These can include, for example, access to a broader investor base, greater visibility in general or another goal. Consider the likelihood that a particular exchange can meet those goals. Seek an exchange where investors and other market participants are familiar with other companies in the same industry. Analyze the trading price and volume of comparable stocks on the exchanges being considered. Understand the liability risks of listing on a particular exchange. Choose financial, legal and accounting advisers that have on-the ground experience with local and international aspects of listing on a particular exchange. Critique any timetable provided by an adviser, exchange or other third party to confirm that it is realistic. Quantify all initial and ongoing costs associated with a particular exchange. These can include, for example, initial listing fees, annual fees, ongoing disclosure costs, and other compliance-related costs.

 For example: ABC corporation is a firm that is located in India. The firm is listed on the National Stock Exchange of India (NSE). Therefore, NSE is the firm's domestic market. Now to expand its horizons, the company can list its shares globally. If the company applies for cross-listing on the New York Stock Exchange (NYSE), it has to abide by the NYSE listing policies. Listing overseas requires more formalities than domestic stock exchanges. In addition, compliance documentations take time. However, if ABC Corporation continues, it gets to trade in the American stock market—now, American investors can also buy shares of ABC Corporation. The Ali Baba group is a popular example of cross-listing. Ali Baba shares trade on the Hong Kong Stock Exchange and the New York Stock Exchange (NYSE). Similarly, British Oil and Gas Company is listed on the London Stock Exchange, NYSE, and the Frankfurt Stock Exchange. Tata Motors from India is listed both on NSE and NYSE.

Advantages of cross-border listing

Companies that list shares across the globe attract varied investors belonging to different countries. This means more capital. But it also facilitates diversification advantages. MNCs that list globally are insulated from economic fluctuation occurring in a part of the world. Only popular

corporations try to list globally. Having shares in multiple exchanges buys the firm goodwill and a reputation in the international market. In addition, it adds to the firm's international presence. It can resolve a company's liquidity issues. Cross-listed companies have more capital requirements. The company enjoys access to a new base of investors, and at the same time, it becomes easy for an investor to buy the shares.

Disadvantages of cross-border listing

First, many economists consider international listing an overrated strategy. They claim that the increase in the capital acquisition is limited. Companies must abide by and follow listing regulations for each stock exchange. The procedures are lengthy and tiresome. Filing and regulatory procedures eventually require time, money, and effort. There is an increase in the company's stakeholders. In addition, post listing, the company acquires international stakeholders. Before, all shareholders were located in the same country. The endeavour can backfire. When cross-listing fails, it can tarnish a firm brand image globally. When the shares of a company are listed on multiple exchanges, the political and business environment of different nations can affect shares price—it is a corporate risk.

Some Cross-Listing Companies

- Hewlett Packard is listed both on NYSE and NASDAQ.
- Tata Motors is listed on the NSE of India and NYSE.
- GlaxoSmithKline is listed on both NYSE and NSE.

Notes: Cross-listing is a business practice where a company lists its shares in multiple stock exchanges. To do that, the firm must comply with the policies of the particular stock exchange. Cross-listed companies acquire fresh capital, resolving immediate liquidity issues. Most cross-listed companies are multinational conglomerates. Regulations vary between stock exchanges, be it the filing process, the minimum number of shares, or required market capitalization. Cross-listed companies benefit from diversification advantages. MNCs that list globally are insulated from economic fluctuation occurring in a part of the world.

13.3 Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) measures the relationship between the expected return and the risk of investing in security. This model is used to analyze securities and price them given the expected rate of return and cost of capital involved. The Capital Asset Pricing Model, derived by Sharpe, Lintner, and Mossin, stipulates assumptions regarding the market and how investors behave to enable the creation of an equilibrium model of prices in the whole market. CAPM explains that the market equilibrium is attained when all investors hold portfolios whose constituents are a combination of riskless assets and the market portfolio.

Assumptions Underlying the CAPM

1. There are no transaction costs
2. There are no taxes
3. Assets are infinitely divisible
4. Unlimited short-selling is permissible
5. All assets are marketable/liquid
6. Investors are price takers whose individual buy and sell transactions do not affect the price
7. Investors' utility functions are based solely on expected portfolio return and risk
8. The only concern among investors are risk and return over a single period, and the single period is the same for all investors.

Under these assumptions, the expected rate of return over a given holding time is given by:

$E(Ri) = Rf+\beta i(Rm-Rf)$

Where

E(Ri) : the expected return of asset i over the holding period

Rf: rate of return on the risk-free asset.

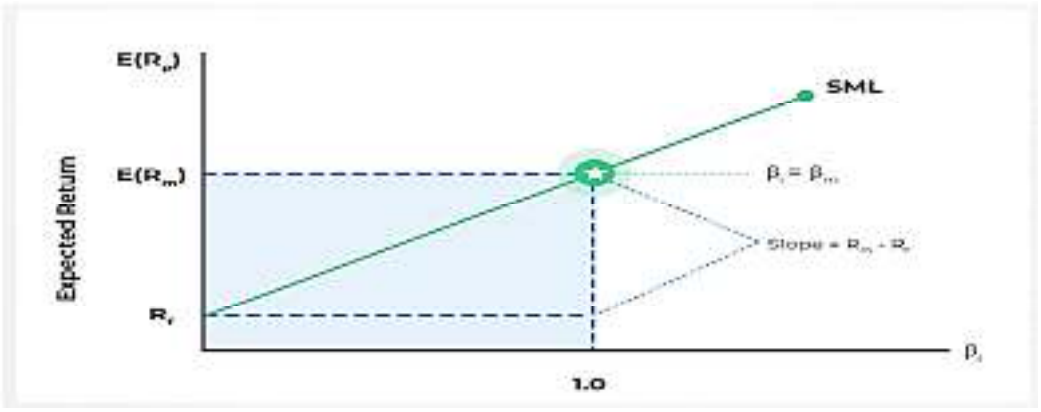
Rm: Expected market return over the holding period

βi: the Beta factor of the asset i.

Note that:

(Rm−Rf)is the expected return per unit risk (beta) and βi(Rm−Rf) is the expected return above the risk-free rate of return.

Beta is a measure of the systematic risk associated with a particular stock, asset, or portfolio. Systematic risk is the portion of risk that cannot be eliminated by any amount of diversification.



A value of beta above 1 indicates a stock/asset/portfolio that has, historically, amplified the return of the whole market (positive or negative). A beta close to zero would indicate a stock/asset/portfolio that provides a more stable return than the market as a whole. A negative beta would signify a stock/asset/portfolio whose performance is counter-cyclical, i.e., offsets the overall market experience.

Derivation of CAPM

The derivation of CAPM involves three major steps:

Recognize that investors are only compensated for bearing systematic risk, not specific risks that can easily be diversified away. Note that, beta is an appropriate measure of systematic risk. Suppose we recognize that portfolio expected return is a weighted average of individual expected returns and portfolio beta is a weighted average of the individual betas. In that case, we can show that portfolio return is a linear function of portfolio beta. And because arbitrage prevents mispricing of assets relative to systematic risk, then an individual asset's expected return is a linear function of its beta. We can then use the risk-free asset and the market portfolio to solve for the intercept and slope of the CAPM.

E(Ri) = Rf+βi(Rm−Rf)

Advantages of CAPM

1. CAPM considers only the systematic or market risk or not the security's only inherent or systematic risk. This factor eliminates the vagueness associated with an individual security's risk, and only the general market risk, which has a degree of certainty, becomes the primary factor.
2. The model assumes that the investor holds a diversified portfolio, and hence unsystematic risk is eliminated between the stock holdings.

3. It is widely used in the finance industry to calculate the cost of equity and ultimately the weighted average cost of capital, which is used extensively to check the cost of financing from various sources.
4. It is a universal and easy-to-use model.
5. Given the extensive presence of this model, this can easily be utilized for comparisons between stocks of various countries.

Cross Border Listing

The structure of global equity markets has changed considerably over the past few decades as technological progress and the liberalization of capital flows have lowered the barriers that insulated national markets from each other. However, while investors can now access foreign capital markets more easily, geography has not become irrelevant. Obstacles to international capital flows, such as legal restrictions on capital mobility and foreign ownership, the costs associated with trading and acquiring information on firms listed abroad, and concerns over investor protection in certain foreign jurisdictions, still exist. The segmentation of markets that results from these barriers creates incentives for corporate managers to adopt financial policies such as international cross-listing, whereby a firm lists its shares for trading on at least two stock exchanges located in different countries. Although prevailing political attitudes on internationalism may ebb and flow around the world, on the whole, the footprint of globalization is well established. From technology to trade, from communications to currency, the world is more interconnected than ever before. Capital markets are no exception, as companies regularly look beyond their own borders for capital-raising opportunities.

Companies can access the world's capital markets in various ways. Through a cross-border listing, a company can reach beyond its home jurisdiction to identify a foreign stock exchange that meets its particular corporate financing needs. Companies have a wide range of stock exchanges to choose from, from major global finance hubs to other international listing venues that are well-placed to address financing needs for particular industries. In other cases, a company may choose to list in its home jurisdiction, while still accessing capital from a deeper pool of investors around the world. A company conducting a public offering and listing in its home jurisdiction often simultaneously seeks to raise capital overseas through private placements to institutional investors in multiple jurisdictions.

Cross-listing is a common practice among many multinational companies. Whenever a company launches an IPO (goes public by listing its shares on the stock exchange), the domestic stock exchange is the first choice. A domestic stock exchange is located in the same country as the firm. So, when a company explores other exchanges beyond the domestic stock exchange, it is called cross-listing.

Practical tips for a Successful Listing

Regardless of the stock exchanges considered for a listing, a company can increase its chances of success by following these practical tips.

1. Prioritize your goals for the listing: These can include, for example, access to a broader investor base, greater visibility in general or another goal.
2. Consider the likelihood that a particular exchange can meet those goals.
3. Seek an exchange where investors and other market participants are familiar with other companies in the same industry.
4. Analyze the trading price and volume of comparable stocks on the exchanges being considered.
5. Understand the liability risks of listing on a particular exchange.

 For example Listing overseas requires more formalities than domestic stock exchanges. In addition, compliance documentations take time. However, if ABC corporation continues, it gets to trade in the American stock market—now, American investors can also buy shares of ABC

corporation. The Ali Baba group is a popular example of cross-listing. Ali Baba shares trade on the Hong Kong Stock Exchange and the New York Stock Exchange (NYSE). Similarly, British Oil and Gas Company is listed on the London Stock Exchange, NYSE, and the Frankfurt Stock Exchange. Tata Motors from India is listed both on NSE and NYSE.

Benefits of Cross-Border Listing

1. The company can expand its potential investor base, which will lead to a higher stock price and lower cost of capital.
2. Cross-listing creates a secondary market for the company's shares, which facilitates raising new capital in foreign markets.
3. Cross-listing can enhance the liquidity of the company's stock. –
4. Cross-listing enhances the visibility of the company's name and its products in foreign marketplaces.

Recall the definition of beta:

$$\beta_i = \frac{Cov(R_i, R_M)}{Var(R_M)}$$

We can recalibrate the CAPM formula:

$$\overline{R_i} = R_f + \beta \times (\overline{R_M} - R_f)$$

As

$$\overline{R_i} = R_f + \frac{Cov(R_i, R_M)}{Var(R_M)} \times (\overline{R_M} - R_f)$$

$$\overline{R_i} = R_f + \frac{(\overline{R_M} - R_f)}{Var(R_M)} \times Cov(R_i, R_M)$$

We can develop a measure of aggregate risk aversion, A^M

$$A^M \times M = \frac{(\overline{R_M} - R_f)}{Var(R_M)}$$

We can restate the CAPM using A^M

$$\overline{R_i} = R_f + A^M \times M \times Cov(R_i, R_M)$$

Capital Asset Pricing Under Cross-Listings: The International Asset Pricing Model

This equation indicates that, given investors' aggregate risk aversion measure, the expected rate of return on an asset increases as the asset's covariance with the market portfolio increases. In fully

integrated capital markets, each asset will be priced according to the world's systematic risk.

$$\bar{R}_i = R_f + A^M \times M \times Cov(R_i, R_M)$$

$$\bar{R}_i = R_f + A^W \times W \times Cov(R_i, R_W)$$

Notes: CAPM is widely regarded as one of the foremost models for calculating the risk and returns associated with investing in stocks. Although it utilizes a few assumptions, the rationale behind the model and the ease of use make it one of the accepted and logical ways to help investors in their decision-making. A firm can benefit from international cross-listings in terms of a lower cost of capital a higher stock price, and access to new sources of capital. When a firm's stock is cross-listed on foreign exchanges in an otherwise segmented capital market, the stock will be priced according to the world's systematic risk as if international capital markets were fully integrated. Many countries still maintain restrictions on investment by foreigners. Under an ownership constraint, foreign and domestic country investors may face different share prices, resulting in the pricing-to-market phenomenon generally raises the firm's overall cost of capital.

13.4 Effect of Foreign Equity Ownership Restrictions

Foreign direct investment (FDI) is when a company takes controlling ownership in a business entity in another country. With FDI, foreign companies are directly involved with day-to-day operations in the other country. This means they aren't just bringing money with them, but also knowledge, skills, and technology. Generally, FDI takes place when an investor establishes foreign business operations or acquires foreign business assets, including establishing ownership or controlling interest in a foreign company. Foreign Direct Investment (FDI) leads to the long-term growth of the economy. MNCs bring about technology transfer to domestic companies. Organic growth or expansion takes place in the companies. Employment too rises. FDI strengthens the balance sheet as it raises the assets of the companies. Profits of the businesses increase and labour productivity too increases. Per capita income increases and consumption improves. Tax revenues increase and government spending rises.

Components of FDI

The Government has made numerous attempts to uplift the amendments and policies in India to boost Foreign Direct Investment [FDI]. The three FDI components and their brief description is mentioned below-

Equity capital happens when the company owns a share to profit from multiple businesses. The purchase of shares in a company in a country other than one's own by a foreign direct investor is known as equity capital.

Reinvested Earnings: The direct investor reinvests profit in the company for further profits. Profits not dispersed as dividends by affiliates or earnings not remitted to the direct investor are referred to as "reinvested earnings." Affiliates reinvest their reserved gains.

Intra-company loans include investing by any investor for a brief period for further gains. Intra-company loans make up and account for short-term and long-term loans. The borrowing and lending of transactions can happen between direct investors and affiliated enterprises.

Method of FDI in India

1. Automatic Method of FDI: In India, automatic FDI investments are made only in no critical sectors like medical, thermal power insurance, petroleum, and aviation. The Automatic Route eliminates the need for a non-resident investor or an Indian corporation to seek Government of India clearance for their investment. The Reserve Bank of India manages the Automatic Route of FDI.
2. Government Method of FDI: The Government Approval Route necessitates approval from the Indian government before investment. In this method, the company needs to take the

government's permission before making an investment in the country; such investments are made for critical sectors like defence, telecommunication, satellite, and private security agencies only after the government's permission.

Advantages of foreign direct investment

1. Economic growth: The creation of jobs is the most obvious advantage of FDI, one of the most important reasons why a nation (especially a developing one) will look to attract foreign direct investment. FDI boosts the manufacturing and services sector which results in the creation of jobs and helps to reduce unemployment rates in the country.
2. Human capital development: Human capital involves the knowledge and competence of a workforce. Skills that employees gain through training and experience can boost the education and human capital of a specific country. Through a ripple effect, it can train human resources in other sectors and companies.
3. Technology: Targeted countries and businesses receive access to the latest financing tools, technologies, and operational practices from all across the world. Increase in exports: Many goods produced by FDI have global markets, not solely domestic consumption. The creation of 100% export-oriented units helps to assist FDI investors in boosting exports from other countries.
4. Exchange rate stability: The flow of FDI into a country translates into a continuous flow of foreign exchange, helping a country's Central Bank maintain a prosperous reserve of foreign exchange which results in stable exchange rates.
5. Improved Capital Flow: The flow of capital is particularly beneficial for countries with limited domestic resources, as well as for nations with restricted opportunities to raise funds in global capital markets.
6. Climate: The United Nations has also promoted the use of FDI around the globe to help combat climate change.

Disadvantages of foreign direct investment

1. Hindrance of domestic investment: Sometimes FDI can hinder domestic investment. Because of FDI, countries' local companies started losing interest in investing in their domestic products. The risk from political changes: Other countries' political movements can be changed constantly which could hamper the investors.
2. Negative exchange rates: Foreign direct investments can sometimes affect exchange rates to the advantage of one country and the detriment of another.
3. Higher costs: When investors invest in foreign countries, they might notice that it is more expensive than when goods are exported. Oftentimes, more money is invested into machinery and intellectual property than in wages for local employees.
4. Economic non-viability: Considering that foreign direct investments may be capital-intensive from the point of view of the investor, it can sometimes be very risky or economically non-viable.
5. Expropriation: Constant political changes can lead to expropriation. In this case, those countries' governments will have control over investors' property and assets.
6. Modern-day economic colonialism: Many third-world countries, or at least those with a history of colonialism, worry that foreign direct investment would result in some kind of

modern-day economic colonialism, which exposes host countries and leaves them vulnerable to foreign companies' exploitation.

7. Poor performance: Multinationals have been criticized for poor working conditions in foreign factories.

FDI can create intense competition for domestic businesses, which may find it difficult to compete with foreign companies that have access to superior technology and resources. India may become economically dependent on foreign countries if it relies too heavily on FDI. FDI can have adverse environmental impacts, as foreign companies set up their manufacturing units and industries here. While companies have incentives to internationalize their ownership structure to lower the cost of capital and increase market share, they may be concerned with the possible loss of corporate control to foreigners. In some countries, there are legal restrictions on the percentage of a firm that foreigners can own. These restrictions are imposed as a means of ensuring domestic control of local firms.

Suppose foreigners, if allowed, would like to buy 30 percent of an ABC firm. But because of ownership constraints imposed on foreigners, they can purchase at most 20 percent. Because this constraint is effective in limiting desired foreign ownership, foreign and domestic investors may face different market share prices. This dual pricing is the pricing-to-market phenomenon. Nestlé used to issue two different classes of common stock: bearer shares and registered shares. Foreigners were only allowed to buy bearer shares. Swiss citizens could buy registered shares. The bearer stock was more expensive. On November 18, 1988, Nestlé lifted restrictions imposed on foreigners, allowing them to hold registered shares as well as bearer shares.

Following this, the price spread between the two types of shares narrowed dramatically. This implies that there was a major transfer of wealth from foreign shareholders to Swiss shareholders. The price of bearer shares declined about 25 percent. The price of registered shares rose by about 35 percent. Because registered shares represented about two-thirds of the market capitalization, the total value of Nestlé increased substantially when it internationalized its ownership structure. Nestlé's cost of capital therefore declined.

Conclusion

Many countries still maintain restrictions on investment by foreigners. Under an ownership constraint, foreign and domestic country investors may face different share prices, resulting in the pricing-to-market phenomenon generally raises the firm's overall cost of capital.

Summary

1. Capital structure decision refers to deciding the forms of financing and their relative proportions in total capitalisation. Capital structure will decide the weight of debt and equity and ultimately overall cost of capital as well as the value of the firm. So capital structure is relevant in maximizing the value of the firm and minimising the overall cost of capital.
2. Cost of capital is the minimum rate of return or profit a company must earn before generating value. It is calculated by a business accounting department to determine financial risk and whether an investment is justified. Cost of capital is a method of accounting for the returns on an investment that helps an investor to offset the costs.
3. The cost of capital's role in capital structure, it indicates an organization's financial health and informs business decisions. When determining an opportunity's potential expense, the cost of capital helps companies evaluate the progress of ongoing projects by comparing their statuses against their costs. Shareholders and business leaders analyze cost of capital regularly to ensure they make smart, timely financial decisions.
4. The structure of global equity markets has changed considerably over the past few decades as technological progress and the liberalization of capital flows have lowered the barriers that insulated national markets from each other. However, while investors can now access foreign capital markets more easily, geography has not become irrelevant.

5. Cross-listing is a common practice among many multinational companies. Whenever a company launches an IPO (goes public by listing its shares on the stock exchange), the domestic stock exchange is the first choice. A domestic stock exchange is located in the same country as the firm. So, when a company explores other exchanges beyond the domestic stock exchange, it is called cross-listing.

Keywords

- Capital structure
- Cross listing
- Foreign equity
- Stock exchange
- FDI

Self Assessment

1. Which of the following factors effect the capital structure?

A. Growth and stability of sales
B. Nature of industry
C. Risk
D. All of the above

2. Cost of capital is the minimum rate of return or profit a company must earn before generating value.

A. True
B. False

3. The Weighted Average Cost of Capital (WACC) is used to:

A. Calculate the company's total liabilities
B. Determine the overall return on investment for shareholders
C. Assess the cost of various sources of capital in proportion to their weights
D. Estimate the company's net profit margin

4. Which of the following is NOT a component of the cost of capital?

A. Cost of debt
B. Cost of equity
C. Cost of inventory
D. Cost of preferred stock

5. Which of the following is NOT a benefit of cross-border listing?

A. Increased liquidity
B. Access to new investors
C. Higher valuation
D. Reduced regulatory compliance costs

6. Which of the following is NOT a requirement for cross-border listing?

A. The company must meet the listing requirements of both exchanges

B. The company must disclose all relevant information in accordance with the laws of both countries
C. The company must have a strong track record of profitability and growth
D. The company must be listed on a stock exchange in its home country for a minimum of two years

7. Which of the following is an example of a cross-border listing?
A. A US company listing its shares on the London Stock Exchange
B. A Chinese company listing its shares on the Hong Kong Stock Exchange
C. A Japanese company listing its shares on the New York Stock Exchange
D. All of the above

8. Which of the following are assumptions of capital asset pricing model?
A. There are no transaction costs
B. There are no taxes
C. Assets are infinitely divisible
D. All of the above

9. Which of the following are advantages of capital asset pricing model?
A. It is widely used in the finance industry to calculate the cost of equity
B. It is a universal
C. It is easy to use model
D. All of the above

10. Under which of the following method the company needs to take the government's permission before making an investment in the country.
A. Automatic route
B. Government route
C. Both a and b
D. None of the above

11. Which of the following are advantage of foreign direct investment?
A. Economic growth
B. Exchange rate stability
C. Capital inflow
D. All of the above

12. FDI boosts the manufacturing and services sector which results in the creation of jobs and helps to reduce unemployment rates in the country.
A. True
B. False

13. Because of FDI, countries' local companies started losing interest in investing in their domestic products.
A. True
B. False

14. What is the main risk of FDI for host countries?

A. Loss of control over domestic industries

B. Environmental damage

C. Social unrest

D. All of the above

15. Which of the following is NOT a measure that governments can take to attract FDI?

A. Providing tax breaks and other incentives

B. Creating a stable and predictable investment climate

C. Investing in infrastructure and education

D. Imposing restrictions on foreign investment

Answers for Self Assessment

1.	D	2.	A	3.	C	4.	C	5.	D
6.	D	7.	D	8.	D	9.	D	10.	B
11.	D	12.	A	13.	A	14.	D	15.	D

Review Questions

1. Critically examine cost of capital.
2. Write a detailed note on capital asset pricing model.
3. What is cross border listing of stocks? Explain in detail.
4. Explain in detail the effect of foreign equity ownership restrictions.
5. Write a detailed note on calculation of cost of capital.

Further Reading

1. International Financial Management By Cheol S Eun And Bruce G Resnick, M.G. Hills
2. International Finance Management By Jeff Madura, Cengage Learning

Unit 14: International Monetary System

CONTENTS

Objectives

After studying this unit the students will be able to

- Discuss about a gold standard system
- Discuss about Bretton Woods system
- Learn about international monetary fund
- Discuss about tariff and non-tariff barriers

Introduction

The movement of goods across national borders requires the movement of money in the opposite direction. For example, when the US buys coffee from Brazil, it must send money to the Brazilians. When Japan purchases petroleum from Saudi Arabia, it must send money to the Saudis, and so on. For these payments to go on smoothly, there must be certain rules and conventions governing the international financial conduct of nations.

The international monetary system is a set of conventions and rules that support cross-border investments, trades, and the reallocation of capital between different countries. These rules define how exchange rates, macroeconomic management, and balance of payments are addressed between nations. The international monetary system structure was reformed after the North Atlantic financial crisis of 2008-2009. The central element of the international monetary system involves the arrangements by which exchange rates are set. The purpose of an exchange-rate system is to facilitate and promote international trade and finance. There have been three major exchange rate regimes from a historical perspective – fixed, floating, and managed exchange rates. Moreover, it's the worldwide network of the government and financial institutions that determine the exchange rate per currency. It is amazing how the monetary system has evolved from centuries ago when gold coins were used as a way of currency, and where people had to barter products or goods to receive something in exchange. The international monetary system aids countries by loaning them money so they can overcome poverty and debts. Some countries struggle with inflation which means that there is too much product and no demand for it.

The international monetary system is the operating system of the global financial environment. This body comprises investors, multinational companies, and financial institutions. The International Monetary System formulates the framework that facilitates the exchange rates, international payments, and movement of capital between two countries with different currencies. The prerogative of the International Monetary System is to facilitate the exchange of capital, goods, and services between countries. The International Monetary Fund (IMF) oversees articles of the agreement signed in this regard between countries. The responsibility of member countries is to formulate economic and financial policies that facilitate the economic and financial conditions to ultimately result in economic growth by maintaining price stability.

Since the 19th Century, the International Monetary System has undergone four stages of evolution at different points in time to form the structure as we know it today. Let us understand the occurrences that led to the changes and their current implications through the points below:

The Gold standard

The War Period

The Bretton Woods System

The Jamaica System

The Gold Standard

Between 1880 and 1914, the gold standard was referred to as the monetary system through which each country could fix the value of their currency in terms of gold. The exchange rate was based on the determined value.

 For example, if the U.S. fixed 1 ounce of gold = $20. The United Kingdom had set the value of one ounce of gold equal to 10 pounds. Then, the pound-dollar exchange rate would be $20 = 10 Pounds.

The War Period

Between 1925-1933 between the world wars, the gold standard started losing its way. The war had created a dent in the world economy, and every country wanted to export more to revamp and rebuild their economies. Therefore, they significantly depreciated their currencies' value to export extensively and benefit from economies of scale. This period of chaos and rebuilding saw exchange rates fluctuate and competitive devaluation unlike ever before.

The Bretton Woods System

Only a few nations had the resources to survive after two world wars, while others struggled to feed their citizens. In times like these, the United States of America and the United Kingdom started discussing the possibilities and ways to rebuild the world economy after two disastrous wars in the mid-1940s. The United Nations formulated the new international monetary system at the Bretton Woods Conference in Bretton Woods, New Hampshire. The Bretton Woods conference led to the creation of a dollar-based fixed exchange rate system. Under this system, the U.S. dollar was backed by reserve gold. All other currencies did not have to maintain a gold reserve for conversion. Therefore, the conversion rates were minimal.

The Jamaica System

Around 1971, high inflation rates and a trade deficit led to a gold process hike. Therefore, the U.S. had to stop the convertibility of gold. Owing to factors like these, the Bretton Woods system collapsed. Hence the global economy moved towards a flexible exchange rate system in 1973 and by 1976. They formalized the system through the convention in Jamaica. Under the Jamaica or floating rate system, demand and supply would affect the currency exchange rates.

Functions of International Monetary System

- Facilitates the free flow of different currencies in the open market.
- Restrict intervention from government or central banks only in cases of currency stabilization.
- Third, facilitate global trade of goods, services, and money.

- Fourth, Maintain a system that regulates the exchange rates through the forces of the market and not by any particular institution or organization.

14.1 The Gold Standard

The gold standard operated from about 1880 to the outbreak of World War I in 1914. An attempt was made to re-establish the gold standard after the war, but it failed in 1931 during the Great Depression. It is highly unlikely that the gold standard will be re-established in the near future—if ever. Nevertheless, it is very important to understand the advantages and disadvantages inherent in the operation of the gold standard, not only for its own sake, but also because they were (to some extent) also true for the fixed exchange rate system (the Bretton Woods system, or gold-exchange standard) that operated from the end of World War II until it collapsed in 1971. Under the gold standard, each nation defines the gold content of its currency and passively stands ready to buy or sell any amount of gold at that price. Since the gold content in one unit of each currency is fixed, exchange rates are also fixed.

 For example, under the gold standard, a £1 gold coin in the United Kingdom contained 113.0016 grains of pure gold, while a $1 gold coin in the United States contained 23.22 grains. This implied that the dollar price of the pound, or the exchange rate, was R = $/£ = 113.0016/23.22 = 4.87. This is called the mint parity.

Since the cost of shipping £1 worth of gold between New York and London was about 3 cents, the exchange rate between the dollar and the pound could never fluctuate by more than 3 cents above or below the mint parity (i.e., the exchange rate could not rise above 4.90 or fall below 4.84). The reason is that no one would pay more than $4.90 for £1, since he could always purchase $4.87 worth of gold at the U.S. Treasury (the Federal Reserve Bank of New York was only established in 1913), ship it to London at a cost of 3 cents, and exchange it for £1 at the Bank of England (the U.K. central bank). Thus, the U.S. supply curve of pounds became infinitely elastic (horizontal) at the exchange rate of R = $4.90/£1. This was the gold export point of the United States.

The exchange rate was determined within the gold points by the forces of demand and supply and was prevented from moving outside the gold points by gold shipments. That is, the tendency of a currency to depreciate past the gold export point was halted by gold outflows from the nation. These gold outflows represented the deficit in the nation's balance of payments. Conversely, the tendency of a nation's currency to appreciate past the gold import point was halted by gold inflows. These gold inflows measured the surplus in the nation's balance of payments. Since deficits were supposed to be settled in gold and nations had limited gold reserves, deficits could not go on forever but had to be corrected quickly.

The Adjustment Mechanism Under the Gold Standard

The adjustment mechanism under the gold standard, as explained by Hume, was the automatic price-specie-flow mechanism, which operated as follows. Since each nation's money supply consisted of either gold itself or paper currency backed by gold, the money supply would fall in the deficit nation and rise in the surplus nation. As a result, the exports of the deficit nation would be encouraged and its imports discouraged until its balance-of-payments deficit was eliminated. The opposite would occur in the surplus nation. For the adjustment process to operate, nations were not supposed to sterilize (i.e., neutralize) the effect of a balance-of-payments deficit or surplus on the nation's money supply. On the contrary, the rules of the game of the gold standard required a deficit nation to reinforce the adjustment process by further restricting credit and a surplus nation to further expand credit. However, Nurkse and Bloomfield found that monetary authorities often did not follow the rules of the game during the period of the gold standard but sterilized part, though not all, of the effect of a balance-of-payments disequilibrium on the nation's money supply.

Michaely argued that this was necessary to moderate the adjustment process and prevent an excessive reduction in the deficit nation's money supply and an excessive increase in the surplus nation's money supply. This is how the adjustment mechanism was supposed to have worked under the gold standard.

The Interwar Experience

With the outbreak of World War I, the classical gold standard came to an end. Between 1919 and 1924, exchange rates fluctuated wildly, and this led to a desire to return to the stability of the gold standard. In April 1925, the United Kingdom re-established the convertibility of the pound into gold at the pre-war price and lifted the embargo on gold exports that it had imposed at the outbreak of World War I. Other nations followed the United Kingdom's lead and went back to gold. (The United States had already returned to gold in 1919.) However, the new system was more in the nature of a gold-exchange standard than a pure gold standard in that both gold and currencies convertible into gold were used as international reserves. This economized on gold, which had become a much smaller percentage of the total value of world trade.

Causes of the collapse of the gold-exchange standard,

While France's decision to convert all of its pounds into gold was the immediate cause of the collapse of the gold-exchange standard, the more fundamental causes were the lack of an adequate adjustment mechanism as nations sterilized the effect of balance-of-payments disequilibria on their money supplies in the face of grossly inappropriate parities, the huge destabilizing capital flows between London and the emerging international monetary centres of New York and Paris, and the outbreak of the Great Depression (to which the malfunction of the international monetary system contributed). However, it is likely that any international monetary system would have collapsed under the tremendous strain of worldwide depression.

According to Nurkse, the interwar experience clearly indicated the prevalence of destabilizing speculation and the instability of flexible exchange rates. This experience strongly influenced the Allies at the close of World War II to establish an international monetary system with some flexibility but with a heavy emphasis on fixity as far as exchange rates were concerned.

14.2 Bretton Woods System

The Bretton Woods system was an international monetary agreement that standardized currency exchange rates. Currencies belonging to various nations were pegged against the US dollar. The US dollar itself was pegged against the price of gold. The Bretton Woods system was developed as an international monetary exchange arrangement. The system fixed currencies belonging to 44 countries against the value of the US dollar. It aimed to bring uniformity to global exchange rates. It was based on the gold standard. This system regulated international trade between 44 countries and remained in practice from 1945 to 1973. The system collapsed because the US dollar could not hold its value. The US dollar itself was pegged against the price of gold. Initially, one ounce of gold was worth $35. This system was followed between 1945 and 1973. On July 01, 1944, 730 representatives from 44 countries attended the United Nations Monetary and Financial Conference. The conference was held at Bretton Woods, New Hampshire. Providing consent to a new international monetary system was the purpose of this conference. It was a collective strategy to recover from the impact of World War II. The representatives wanted to revitalize international trade by standardizing exchange rates across the globe. The allied countries duly accepted the Bretton Woods Agreement. Canada, Mexico, Russia, Brazil, China, India, Netherlands, Poland, Belgium, Chile, and Czechoslovakia were the active member nations.

In December 1945, the Bretton Woods Agreement led to the formation of two Bretton Woods Institutions—The International Bank for Reconstruction and Development and The International Monetary Fund (IMF). The International Bank for Reconstruction and Development is the lending arm of the World Bank. These organizations hold great significance on the global front—they facilitate international trade and finance nations. The World Bank was established to help nations recover from World War II. The International Monetary Fund regulates global exchange rates. The IMF also facilitates economic cooperation internationally.

Features

Bretton Woods aimed to fix problems of the standardized monetary valuation. Characteristics of Bretton Woods are as follows:

1. Stabilizing international exchange rates was the primary objective of Bretton Woods.
2. It was an attempt to help nations recover economically post-World War II.
3. Bretton Woods was adopted by 44 countries—they agreed to peg their currencies against the USD.

4. The US Dollar was pegged against the price of gold—fixed at $35 per ounce of gold.
5. The US Dollar was considered—an international reserve currency.
6. It provided a fixed exchange rate. However, this rate was adjustable.
7. It standardized international monetary payments—by facilitating currency conversion.
8. Post Bretton Woods, allied countries did not have any control over the international payment and settlement system

Collapse of Bretton Woods

Between 1968 to 1973, Bretton Woods was on its way out. US President Richard M. Nixon ceased USD-gold convertibility. In the 1960s, the US dollar struggled to hold its value. Nixon noticed that the US was short on gold. US's Gold reserves could not meet the value of dollars in circulation. Economists' attempts to revitalize Bretton Woods failed. In 1973, the Bretton Woods agreement collapsed—it ceased to exist. The Bretton Woods arrangement failed due to the following reasons:

The system depleted US gold reserves—as more and more US dollars were issued to meet international demand. In the 1960s post-Vietnam War, the US struggled with inflation. Its current account balance was low; thus, the government decided to call off this system. Moreover, this system lacked a proper adjustment mechanism for the balance of payments. There was a deficit balance of payment in the US. Meanwhile, there was a huge demand for the US dollar worldwide, resulting in liquidity issues. The US dollar was the international reserve currency. This caused seigniorage issues for many other nations. Other nations believed that this system provided an undue advantage to the US. USD yielded a higher rate of return when sold internationally and lesser when sold domestically. Finally, in response to inflation and the current account balance deficit, the government declared restrictions on gold-dollar conversions. Post Bretton Woods breakdown, countries did not need to peg currencies against USD or gold prices. The coins were free to float and fluctuated with the market demand. Central banks regulated the supply of money in their respective countries. However, as a consequence of the Bretton Woods collapse, the world witnessed oil shocks. Countries absorbed expensive oil prices with flexible exchange rates.

Significance of the Bretton Woods Agreement

Despite falling apart, the Bretton Woods summit and agreement are responsible for a number of notably important aspects in the financial world. First and foremost is the creation of the IMF and the World Bank. Both institutions remain vital to the global economy to this day. On a larger scale, however, the agreement unified 44 nations from around the world, bringing them together to solve a growing global financial crisis. It helped to strengthen the overall world economy and maximize international trade profit.

 **Notes:** The Bretton Woods Agreement established a system through which a fixed currency exchange rate could be created using gold as the universal standard. Exchange rate stability and regulation of global payment and settlement post-World War II were the objectives of the Bretton Woods agreement. On July 01, 1944, 730 delegates from 44 countries attended the United Nations Monetary and Financial Conference. It was held in Bretton Woods, New Hampshire. The Bretton Woods Agreement led to the formation of the Bretton Woods Institutions—The World Bank and the International Monetary Fund (IMF).

14.3 International Monetary Fund

The International Monetary Fund (IMF) is an organization of 190 member countries, each of which has representation on the IMF's executive board in proportion to its financial importance, so that the most powerful countries in the global economy have the most voting power.

Objectives of IMF:

- Foster global monetary cooperation
- Secure financial stability
- Facilitate international trade
- Promote high employment and sustainable economic growth
- And reduce poverty around the world

- Macro-economic growth
- Policy advise & financing for developing countries,
- Promotion of exchange rate stability, and an international payment system

What Does the IMF Do?

It has three critical missions:

1. Furthering international monetary cooperation, encouraging the expansion of trade and economic growth,
2. Discouraging policies that would harm prosperity.
3. To fulfil these missions, IMF member countries work collaboratively with each other and with other international bodies.

What is the History of IMF?

The IMF, also known as the Fund, was conceived at a UN conference in Bretton Woods, New Hampshire, United States, in July 1944. The 44 countries at that conference sought to build a framework for economic cooperation to avoid a repetition of the competitive devaluations that had contributed to the Great Depression of the 1930s. Countries were not eligible for membership in the International Bank for Reconstruction and Development (IBRD) unless they were members of the IMF. IMF, as per Bretton Woods agreement to encourage international financial cooperation, introduced a system of convertible currencies at fixed exchange rates, and replaced gold with the U.S. dollar (gold at $35 per ounce) for official reserve.

After the Bretton Woods system (system of fixed exchange rates) collapsed in the 1971, the IMF has promoted the system of floating exchange rates. Countries are free to choose their exchange arrangement, meaning that market forces determine the value of currencies relative to one another. This system continues to be in place today.

During 1973 oil crisis, IMF estimated that the foreign debts of 100 oil-importing developing countries increased by 150% between 1973 and 1977, complicated further by a worldwide shift to floating exchange rates. IMF administered a new lending program during 1974–1976 called the Oil Facility. Funded by oil-exporting nations and other lenders, it was available to nations suffering from acute problems with their balance of trade due to the rise in oil prices. IMF was one of the key organisations of the international economic system; its design allowed the system to balance the rebuilding of international capitalism with the maximisation of national economic sovereignty and human welfare, also known as embedded liberalism. The IMF played a central role in helping the countries of the former Soviet bloc transition from central planning to market-driven economies.

In 1997, a wave of financial crises swept over East Asia, from Thailand to Indonesia to Korea and beyond. The International Monetary Fund created a series of bailouts (rescue packages) for the most-affected economies to enable them to avoid default, tying the packages to currency, banking and financial system reforms. Global Economic Crisis (2008): IMF undertook major initiatives to strengthen surveillance to respond to a more globalized and interconnected world. These initiatives included revamping the legal framework for surveillance to cover spill-overs (when economic policies in one country can affect others), deepening analysis of risks and financial systems, stepping up assessments of members' external positions, and responding more promptly to concerns of the members.

Functions of IMF

1. Provides Financial Assistance: To provide financial assistance to member countries with balance of payments problems, the IMF lends money to replenish international reserves, stabilize currencies and strengthen conditions for economic growth. Countries must embark on structural adjustment policies monitored by the IMF.
2. IMF Surveillance: It oversees the international monetary system and monitors the economic and financial policies of its 190 member countries.
3. Capacity Development: It provides technical assistance and training to central banks, finance ministries, tax authorities, and other economic institutions. This helps countries

raise public revenues, modernize banking systems, develop strong legal frameworks, improve governance, and enhance the reporting of macroeconomic and financial data. It also helps countries to make progress towards the Sustainable Development Goals (SDGs).

Governance Setup of IMF

1. Board of Governors: It consists of one governor and one alternate governor for each member country. Each member country appoints its two governors. It is responsible for electing or appointing executive directors to the Executive Board. Approving quota increases, Special Drawing Right allocations. Admittance of new members, compulsory withdrawal of member. Amendments to the Articles of Agreement and By-Laws.
2. Ministerial Committees: The Board of Governors is advised by two ministerial committees, International Monetary and Financial Committee (IMFC): IMFC has 24 members, drawn from the pool of 190 governors, and represents all member countries. It discusses the management of the international monetary and financial system. It also discusses proposals by the Executive Board to amend the Articles of Agreement.
3. Development Committee: is a joint committee (25 members from Board of Governors of IMF & World Bank), tasked with advising the Boards of Governors of the IMF and the World Bank on issues related to economic development in emerging market and developing countries. It serves as a forum for building intergovernmental consensus on critical development issues.
4. Executive Board: It is a 24-member Executive Board elected by the Board of Governors. It conducts the daily business of the IMF and exercises the powers delegated to it by the Board of Governors & powers conferred on it by the Articles of Agreement. It discusses all aspects of the Fund's work, from the IMF staff's annual health checks of member countries' economies to policy issues relevant to the global economy.
5. Executive Board: The Board normally makes decisions based on consensus, but sometimes formal votes are taken. Votes of each member equal the sum of its basic votes (equally distributed among all members) and quota-based votes. A member's quota determines its voting power.

IMF and India

India is a founder member of the IMF. International regulation by IMF in the field of money has certainly contributed towards expansion of international trade. India has, to that extent, benefitted from these fruitful results. Post-partition period, India had serious balance of payments deficits, particularly with the dollar and other hard currency countries. It was the IMF that came to her rescue. The Fund granted India loans to meet the financial difficulties arising out of the Indo–Pak conflict of 1965 and 1971. From the inception of IMF up to March 31, 1971, India purchased foreign currencies of the value of Rs. 817.5 crores from the IMF, and the same have been fully repaid. Since 1970, the assistance that India, as other member countries of the IMF, can obtain from it has been increased through the setting up of the Special Drawing Rights (SDRs created in 1969). India had to borrow from the Fund in the wake of the steep rise in the prices of its imports, food, fuel and fertilizers. In 1981, India was given a massive loan of about Rs. 5,000 crores to overcome foreign exchange crisis resulting from persistent deficit in balance of payments on current account.

What is India's Contribution to Lending Resources to IMF?

In the London Summit of the Group of Twenty (G-20), a decision was taken to triple the IMF's lending capacity up to US$ 500 billion. In pursuance of this decision, India decided to invest its reserves, initially up to US$ 10 billion through the Notes Purchase Agreement (NPA), and subsequently up to US$ 14 billion through New Arrangement to Borrow (NAB).

Criticism of IMF

IMF's governance is an area of contention. For decades, Europe and the United States have guaranteed the helm of the IMF to a European and that of the World Bank to an American. The situation leaves little hope for ascendant emerging economies that, despite modest changes in 2015, do not have as large an IMF voting share as the United States and Europe. Conditions placed on loans are too intrusive and compromise the economic and political sovereignty of the receiving countries. 'Conditionality' refers to more forceful conditions, ones that often turn the loan into a policy tool. Policies were imposed all at once, rather than in an appropriate sequence. IMF demands that countries it lends to privatize government services rapidly. It results in a blind faith in the free market that ignores the fact that the ground must be prepared for privatization.

Status of IMF Reforms

Quota Reforms: As part of the Fourteenth General Review of Quotas (2010, India's total quota has been increased to SDR 13,114.4 million from SDR 5821.5 million. With this increase, India's share would increase to 2.75 % (from 2.44%), making it the 8th largest quota-holding country in the IMF.

Due to discontent with IMF, BRICS countries established a new organization called BRICS bank to reduce the dominance of IMF or World Bank and to consolidate their position in the world as BRICS countries accounts for 1/5th of WORLD GDP and 2/5th of world population. It is almost impossible to make any reform in the current quota system as more than 85% of total votes are required to make it happen. Quota Reforms approved by Board of Governors were implemented in 2016 with delay because of reluctance from US Congress as it was affecting its share.

Combined quotas (or the capital that the countries contribute) of the IMF increased to a combined SDR 477 billion (about $659 billion) from about SDR 238.5 billion (about $329 billion). It increased 6% quota share for developing countries and reduced same share of developed or over represented countries.

More representative Executive Board: 2010 reforms also included an amendment to the Articles of Agreement established an all-elected Executive Board, which facilitates a move to a more representative Executive Board.

The 15th General Quota Review (in process) provides an opportunity to assess the appropriate size and composition of the Fund's resources and to continue the process of governance reforms.

Notes: On July 01, 1944, 730 delegates from 44 countries attended the United Nations Monetary and Financial Conference. It was held in Bretton Woods, New Hampshire. The Bretton Woods Agreement led to the formation of the Bretton Woods Institutions—The World Bank and the International Monetary Fund (IMF).

14.4 The Rise of Alternative World Order

As the Cold War was ending American President George H.W. Bush and Soviet Communist Party Chairman Mikhail Gorbachev declared there was a new world order emerging that would be based upon cooperation between the two superpowers. But with the collapse of the Soviet Union, only one super power remained to provide order. Filled with both goodwill and vast hubris, the United States has set for itself the unsustainable task of maintaining global security. It is unsustainable because such a world order is neither in America's interest nor has the consent of those whom it wants to subject to its writ. Although it is possible to concoct long causal chains that tie American safety or prosperity to the fate of failing states in Africa or ethnic conflict in the Balkans, most global problems are distant and more important to others than they are to the United States. On the contrary, the involvement of the United States in these distant problems can be said to threaten American interests. Interventions produce enemies with some affected assuming that it is not altruistic motives that drive the United States, but rather plots to steal their resources or defame their religion. And there are real costs. American soldiers die in these distant fights and American domestic needs are neglected. Vast sums are wasted to corruption and in the frustrations of conducting military operations far from home and with limited objectives and interests. There are objections. Those challenged by the United States, including Russia, China, and many in the Middle East, deny the legitimacy of its actions, and see them as imperialistic meddling in the affairs of others. Even America's allies worry about the wisdom of its intervention, most especially the invasion of Iraq.

Some Americans hope that the United States will come to its strategic senses and abandon the quest to manage global security. Others believe that the expansion of the welfare state, especially with the implementation of national health insurance and the aging of the population, will curtail military spending in the United States and the temptations of being the world's sole superpower. The economy too is a potential restraining factor as the American global policing wars of the post-Cold War era have been financed through extensive borrowing that someday will come due. And American taxpayers may eventually realize that global policing is in fact a large subsidy for the rich nations of Europe and Asia that choose to host American forces and reduce their own. If not the United States in the lead then who? The alternatives are not robust. The UN does significant peacekeeping, particularly in Africa, but is limited in resources and by the Security Council's veto-constrained mandates. There are indeed persistent problems in member participation, troop training, discipline, equipment, and sustainment for UN peacekeepers. Serious change can come about only when the United States actually does less international intervention.

Others will do more, if slowly, the argument can be made when the United States does less because they are closer to most trouble and it is their security that actually is at risk. Aid and accepting refugees from troubled areas is not enough. The rich and big nations of the world will have to fill the vacuum left as the United States pulls back from managing global security, The world of 2030 will be radically transformed from our world today. By 2030, no country—whether the US, China or any other large country—will be a hegemonic power. The empowerment of individuals and diffusion of power among states and from states to informal networks will have a dramatic impact, largely reversing the historic rise of the West since 1750, Restoring Asia's weight in the global economy, and ushering in a new era of "democratization" at the international and domes In addition to individual empowerment and the diffusion of state power, we believe that two other megatrends will shape our world out to 2030: demographic patterns, especially rapid aging; and growing resource demands which, in the cases of food and water, might lead to scarcities. These trends, which are virtually certain, exist today, but during the next 15-20 years they will gain much greater momentum. tic level.

Underpinning the megatrends are tectonic shifts—critical changes to key features of our global environment that will affect how the world "works" The acronym began as a somewhat optimistic term to describe what were the world's fastest-growing economies at the time. But now the BRICS nations—Brazil, Russia, India, China, and South Africa—are setting themselves up as an alternative to existing international financial and political forums. "The founding myth of the emerging economies has faded," Günther Maihold, deputy director of the German Institute for International and Security Affairs, or SWP, confirmed. "The BRICS countries are experiencing their geopolitical moment." Brazil, Russia, India, China, and South Africa are trying to position themselves as representatives of the Global South, providing "an alternative model to the G7". The G7 is an "informal forum" of heads of state of the world's most advanced economies, founded in 1975.

Challenging the World Bank Model

In 2014, with $50 billion (around €46 billion) in seed money, the BRICS nations launched the New Development Bank as an alternative to the World Bank and the International Monetary Fund. In addition, they created a liquidity mechanism called the Contingent Reserve Arrangement to support members struggling with payments. These offers were not only attractive to the BRICS nations themselves but also to many other developing and emerging economies that had had painful experiences with the IMF's structural adjustment programs and austerity measures. This is why many countries said they might be interested in joining the BRICS group. The BRICS bank is open to new members. In 2021, Egypt, the United Arab Emirates, Uruguay, and Bangladesh took up shares. However, these were much lower than the respective $10 billion investments made by the bank's founding members. No sanctions against Russia. Since the start of the Russian war in Ukraine, the BRICS countries have only distanced themselves further from the so-called West. Neither India, Brazil, South Africa nor China is taking part in sanctions against Russia. This is increasingly clear with near-historic levels of trade between India and Russia, or in Brazil's dependence on Russian fertilizer. "Diplomatically, the war in Ukraine appears to have drawn a stark dividing line between an eastern-backed Russia and the West,"

Political scientist Matthew Bishop from the University of Sheffield wrote for the Economics Observatory late last year. "Consequently, some European and US policymakers worry that the BRICS may become less an economic club of rising powers seeking to influence global growth and development, and more a political one defined by their authoritarian nationalism." The BRICS alliance is not so much a counter to the West but more a forum for increased sovereign and

autonomous thought. In a bipolar world, South Africa, India, and Brazil were simply "vying for better terms." China, on the other hand, was using the platform for its global political ambitions, the joint military exercises it with Russia in South Africa. The West has noticed this change in tack and is trying to counteract it. "They are looking very closely," At the G7 summit in Germany in 2022, they made a point of inviting South Africa and India, in order to prevent the optics that the G7 was standing against BRICS. For Washington, Beijing presents both economic and military dilemmas. As China tries to replace the United States as the global leader, countries that benefit from the current world order can help by taking on a bigger share of the burden of maintaining it. In Asia, the prime security issue is how to accommodate the rise of a richer, more assertive China. However many nations in Asia have large populations and growing economies as well. The need is to develop regional institutions that can temper territorial disputes without interrupting the pathway to continued prosperity. Some nations, particularly Japan, Australia, Vietnam, and Taiwan want the United States to be the region's balancer to an ever more powerful China. No doubt the United States needs to think of ways to adjust to the new China, its only possible global challenger, but getting involved in conflicting claims about the ownership of rocky islands in the waters between China and its neighbours is likely not one of them.

Significance of BRICS

1. Big Five Nations: Launched by a meeting of the Foreign Ministers of Brazil, Russia, India and China in 2006 and riding on the political synergy created by regular summits since 2009, BRIC turned itself into BRICS in 2010, with the entry of South Africa.
2. The importance of BRICS is self-evident: it represents 42% of the world's population, 30% of the land area, 24% of global GDP and 16% of international trade.
3. Bridge Between North and South: The grouping has gone through a reasonably productive journey. It strove to serve as a bridge between the Global North and Global South.
4. Common Global Perspective: The BRICs called for the reform of multilateral institutions in order that they reflect the structural changes in the world economy and the increasingly central role that emerging markets now play.
5. Development Cooperation: It developed a common perspective on a wide range of global and regional issues; established the New Development Bank (NDB) created a financial stability net in the form of a Contingency Reserve Arrangement and is on the verge of setting up a Vaccine Research and Development Virtual Center.
6. Expanding People-to-people Cooperation: However, enhancing people-to-people cooperation will have to wait for international travel to revive.

14.5 Tariff and Non-Tariff Barriers

We know that free trade maximizes world output and benefits all nations. However, practically all nations impose some restrictions on the free flow of international trade. Since these restrictions and regulations deal with the nation's trade or commerce, they are generally known as trade or commercial policies. While trade restrictions are invariably rationalized in terms of national welfare, in reality, they are usually advocated by those special groups in the nation that stand to benefit from such restrictions. The most important type of trade restriction has historically been the tariff. A tariff is a tax or duty levied on the traded commodity as it crosses a national boundary. An import tariff is a duty on the imported commodity, while an export tariff is a duty on the exported commodity. Import tariffs are more important than export tariffs, and most of our discussion will deal with import tariffs.

Export tariffs are prohibited by the U.S. Constitution but are often applied by developing countries on their traditional exports (such as Ghana on its cocoa and Brazil on its coffee) to get better prices and raise revenues. Developing nations rely heavily on export tariffs to raise revenues because of their ease of collection. Conversely, industrial countries invariably impose tariffs or other trade restrictions to protect some (usually labor-intensive) industry, while using mostly income taxes to raise revenues. Tariffs can be ad valorem, specific, or compound. The ad valorem tariff is expressed

as a fixed percentage of the value of the traded commodity. The specific tariff is expressed as a fixed sum per physical unit of the traded commodity. Finally, a compound tariff is a combination of an ad valorem and a specific tariff

 For example, a 10 percent ad valorem tariff on bicycles would result in the payment to customs officials of the sum of $10 on each $100 imported bicycle and the sum of $20 on each $200 imported bicycle.

On the other hand, a specific tariff of $10 on imported bicycles means that customs officials collect the fixed sum of $10 on each imported bicycle regardless of its price.

Finally, a compound duty of 5 percent ad valorem and a specific duty of $10 on imported bicycles would result in the collection by customs officials of the sum of $15 on each $100 bicycle and $20 on each $200 imported bicycle.

Tariffs have been sharply reduced since the end of World War II and now average 3 percent on industrial products in developed nations, but they are much higher in developing nations. Trade in agricultural commodities is still subject to relatively high trade barriers.

The partial equilibrium analysis of a tariff is most appropriate when a small nation imposes a tariff on imports competing with the output of a small domestic industry. Then the tariff will affect neither world prices (because the nation is small) nor the rest of the economy (because the industry is small). The tariff redistributes income from domestic consumers (who pay a higher price for the commodity) to domestic producers of the commodity (who receive the higher price). From the nation's abundant factor (producing exportable) to the nation's scarce factor (producing importable). This leads to inefficiencies, referred to as the protection cost, or deadweight loss, of the tariff. When a small nation imposes an import tariff, the domestic price of the importable commodity rises by the full amount of the tariff for individuals in the nation. As a result, domestic production of the importable commodity expands while domestic consumption and imports fall. However, the nation as a whole faces an unchanged world price since the nation itself collects the tariff. These general equilibrium effects of a tariff can be analyzed with the trade models by assuming that the nation redistributes the tariff revenue fully to its citizens in the form of subsidized public consumption and/or general income tax relief. When a large nation imposes an import tariff, its offer curve rotates toward the axis measuring its importable commodity by the amount of the tariff, reducing the volume of trade but improving the nation's terms of trade.

The optimum tariff is one that maximizes the net benefit resulting from improvement in the nation's terms of trade against the negative effect resulting from a reduction in the volume of trade. However, since the nation's benefit comes at the expense of other nations, the latter are likely to retaliate, so that in the end all nations usually lose. Although tariffs have historically been the most important form of trade restriction, there are many other types of trade barriers, such as import quotas, voluntary export restraints, and anti-dumping actions. As tariffs were negotiated down during the post-war period, the importance of nontariff trade barriers was greatly increased.

Import Quotas: A quota is the most important nontariff trade barrier. It is a direct quantitative restriction on the amount of a commodity allowed to be imported or exported. Import quotas can be used to protect domestic industry, to protect domestic agriculture, and/or for balance-of-payments reasons. Import quotas were very common in Western Europe immediately after World War II. Since then import quotas have been used by practically all industrial nations to protect their agriculture and by developing nations to stimulate import substitution of manufactured products and for balance-of-payments reasons. One of several important differences between an import quota and an equivalent (implicit) import tariff. That is, with a given import quota, an increase in demand will result in a higher domestic price and greater domestic production than with an equivalent import tariff. On the other hand, with a given import tariff, an increase in demand will leave the domestic price and domestic production unchanged but will result in higher consumption and imports than with an equivalent import quota. A second important difference between an import quota and an import tariff is that the quota involves the distribution of import licenses. If the government does not auction off these licenses in a competitive market, firms that receive them will reap monopoly profits. In that case, the government must decide the basis for distributing licenses among potential importers of the commodity. Finally, an import quota limits imports to the specified level with certainty, while the trade effect of an import tariff may be uncertain. The reason for this is that the shape or elasticity of DX and SX is often not known, making it difficult to estimate the import tariff required to restrict imports to a desired level. Furthermore, foreign exporters may absorb all or part of the tariff by increasing their efficiency of operation or by

accepting lower profits. As a result, the actual reduction in imports may be less than anticipated. Exporters cannot do this with an import quota since the quantity of imports allowed into the nation is clearly specified by the quota. It is for this reason, and also because an import quota is less "visible," that domestic producers strongly prefer import quotas to import tariffs. However, since import quotas are more restrictive than equivalent import tariffs, society should generally resist these efforts. One of the provisions of the Uruguay Round was to change import quotas and other nontariff barriers into equivalent tariffs (a process known as "tariffication"). During the past two decades, these nontariff trade barriers (NTBs), new protectionism, have become more important than tariffs as obstructions to the flow of international trade and represent a major threat to the world trading system.

One of the most important of the nontariff trade barriers, or NTBs, is voluntary export restraints (VERs). These refer to the case where an importing country induces another nation to reduce its exports of a commodity "voluntarily," under the threat of higher all-around trade restrictions when these exports threaten an entire domestic industry. Voluntary export restraints have been negotiated since the 1950s by the United States, the European Union, and other industrial nations to curtail exports of textiles, steel, electronic products, automobiles, and other products from Japan, Korea, and other nations. These are the mature industries that faced sharp declines in employment in the industrial countries during the past three decades. International trade is also hampered by numerous technical, administrative, and other regulations. These include safety regulations for automobile and electrical equipment, health regulations for the hygienic production and packaging of imported food products, and labeling requirements showing origin and contents. Many of these regulations serve legitimate purposes, but some (such as the French ban on scotch advertisements and the British restriction on the showing of foreign films on British television) are only thinly veiled disguises for restricting imports. International commodity agreements and multiple exchange rates also restrict trade. However, as the former are of primary concern to developing nations and the latter relate to international finance. An international cartel is an organization of suppliers of a commodity located in different nations (or a group of governments) that agrees to restrict the output and exports of the commodity with the aim of maximizing or increasing the total profits of the organization. Although domestic cartels are illegal in the United States and restricted in Europe, the power of international cartels cannot easily be countered because they do not fall under the jurisdiction of any one nation. Trade barriers may also result from dumping. Dumping is the export of a commodity at below cost or at least the sale of a commodity at a lower price abroad than domestically. Dumping is classified as persistent, predatory, and sporadic. Strategic trade and industrial policy is another qualified argument for protection. It suggests that by encouraging high-tech industries, a nation can reap the large external economies that result from them and enhance its future growth prospects. Strategic trade and industrial policy do face, however, many practical difficulties because it is difficult for nations to pick winners and because it invites retaliation. Thus, free trade may still be the best policy after all.

Summary

1. The international monetary system is a set of conventions and rules that support cross-border investments, trades, and the reallocation of capital between different countries. These rules define how exchange rates, macroeconomic management, and balance of payments are addressed between nations.
2. The gold standard operated from about 1880 to the outbreak of World War I in 1914. An attempt was made to re-establish the gold standard after the war, but it failed in 1931 during the Great Depression. It is highly unlikely that the gold standard will be re-established in the near future—if ever.
3. With the outbreak of World War I, the classical gold standard came to an end. Between 1919 and 1924, exchange rates fluctuated wildly, and this led to a desire to return to the stability of the gold standard.
4. The Bretton Woods system was developed as an international monetary exchange arrangement. The system fixed currencies belonging to 44 countries against the value of the US dollar. It aimed to bring uniformity to global exchange rates. It was based on the gold

standard. This system regulated international trade between 44 countries and remained in practice from 1945 to 1973.

5. We know that free trade maximizes world output and benefits all nations. However, practically all nations impose some restrictions on the free flow of international trade. Since these restrictions and regulations deal with the nation's trade or commerce, they are generally known as trade or commercial policies. While trade restrictions are invariably rationalized in terms of national welfare, in reality they are usually advocated by those special groups in the nation that stand to benefit from such restrictions.

Keywords

- Gold standard system
- Bretton woods system
- Dumping
- Strategic trade
- International monetary fund

Self Assessment

1. What was the primary purpose of the gold standard system?

A. To stabilize international currency exchange rates
B. To encourage countries to accumulate gold reserves
C. To promote economic growth through gold mining
D. To facilitate international trade by using gold coins

2. What is the main disadvantage of the gold standard system?

A. It can lead to hyperinflation
B. It restricts a country's ability to print money
C. It encourages speculative trading in gold
D. It promotes economic inequality

3. What is the primary purpose of the International Monetary Fund (IMF)?

A. Promoting international trade
B. Providing grants to developing countries
C. Promoting global financial stability and economic cooperation
D. Funding infrastructure projects in member countries

4. How is the head of the International Monetary Fund (IMF) typically chosen?

A. Elected by the United Nations General Assembly
B. Appointed by the President of the United States
C. Selected by the G7 countries
D. Chosen by the IMF's Executive Board

5. Which of the following institutions is often associated with providing financial assistance to countries facing balance of payments problems?

A. World Bank

B. United Nations
C. International Monetary Fund (IMF)
D. World Trade Organization (WTO)

6. What is the primary source of funding for the International Monetary Fund (IMF)?
A. Contributions from member countries
B. Borrowing from international banks
C. Donations from non-governmental organizations
D. Revenue from global trade tariffs

7. In which year was the International Monetary Fund (IMF) established?
A. 1944
B. 1945
C. 1950
D. 1960

8. What is the IMF's Special Drawing Rights (SDR) used for?
A. Financing IMF administrative expenses
B. Providing emergency humanitarian aid
C. A form of international reserve assets allocated to member countries
D. Supporting environmental conservation projects

9. What is a tariff in the context of international trade?
A. A tax imposed on imported goods
B. A restriction on the quantity of exports
C. A subsidy provided to domestic producers
D. A type of trade agreement

10. Which of the following is NOT a primary purpose of tariffs?
A. Protecting domestic industries from foreign competition
B. Generating revenue for the government
C. Promoting free trade
D. Correcting trade imbalances

11. What is a specific tariff?
A. A tariff rate based on the value of the imported goods
B. A tariff rate based on the weight or quantity of the imported goods
C. A tariff rate that applies to a specific group of countries
D. A tariff rate applied uniformly to all imports

12. Which of the following is an example of a non-tariff barrier to trade?
A. Import duties
B. Export subsidies
C. Quotas
D. Value-added tax (VAT)

13. What is the primary purpose of a quota in international trade?
A. To limit the total value of imports
B. To increase government revenue
C. To encourage foreign investment
D. To reduce production costs

14. What does the term "dumping" refer to in international trade?
A. Exporting goods at a price lower than their domestic production cost
B. Charging high import duties on foreign goods
C. Establishing a trade surplus with a specific country
D. Promoting fair competition in the global market

15. What is an import license in the context of non-tariff barriers?
A. A certificate issued to encourage imports
B. A document required for exporting goods
C. A permit issued by a government to import specific products
D. A tax imposed on imported goods

Answers for Self Assessment

1.	A	2.	B	3.	C	4.	D	5.	C
6.	A	7.	B	8.	C	9.	A	10.	C
11.	B	12.	C	13.	A	14.	A	15.	C

Review Questions

1. Critically examine the gold standard system.
2. Why Bretton woods system was collapsed? Explain in detail.
3. Critically examine the international monetary fund.
4. Write a detailed not on rise of alternative world order.
5. How tariff barriers effect trade? Explain in detail.

Further Reading

1. International Financial Management By Cheol S Eun And Bruce G Resnick, M.G. Hills
2. International Finance Management By Jeff Madura, Cengage Learning

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