PREFACE

In the curricular structure introduced by this University for students of Post-Graduate degree programme, the opportunity to pursue Post-Graduate course in a subject is introduced by this University is equally available to all learners. Instead of being guided by any presumption about ability level, it would perhaps stand to reason if receptivity of a learner is judged in the course of the learning process. That would be entirely in keeping with the objectives of open education which does not believe in artificial differentiation. I am happy to note that university has been recently accredited by National Assessment and Accreditation Council of India (NAAC) with grade 'A'.

Keeping this in view, the study materials of the Post-Graduate level in different subjects are being prepared on the basis of a well laid-out syllabus. The course structure combines the best elements in the approved syllabi of Central and State Universities in respective subjects. It has been so designed as to be upgradable with the addition of new information as well as results of fresh thinking and analysis.

The accepted methodology of distance education has been followed in the preparation of these study materials. Co-operation in every form of experienced scholars is indispensable for a work of this kind. We, therefore, owe an enormous debt of gratitude to everyone whose tireless efforts went into the writing, editing, and devising of a proper layout of the materials. Practically speaking, their role amounts to an involvement in 'invisible teaching'. For, whoever makes use of these study materials would virtually derive the benefit of learning under their collective care without each being seen by the other.

The more a learner would seriously pursue these study materials, the easier it will be for him or her to reach out to larger horizons of a subject. Care has also been taken to make the language lucid and presentation attractive so that they may be rated as quality self-learning materials. If anything remains still obscure or difficult to follow, arrangements are there to come to terms with them through the counselling sessions regularly available at the network of study centres set up by the University.

Needless to add, a great deal of these efforts is still experimental—in fact, pioneering in certain areas. Naturally, there is every possibility of some lapse or deficiency here and there. However, these do admit of rectification and further improvement in due course. On the whole, therefore, these study materials are expected to evoke wider appreciation the more they receive serious attention of all concerned.

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Netaji Subhas Open University

Post-Graduate Degree Programme
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(M. Com)

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Module – 1

Module – 2

Module - 1

Unit - 1 ❑ International Dimension of Accounting

Structure

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1.0 Objectives

The objectives of studying Unit-1 are as below :

● It will help to understand the meaning and concept of international accounting

● The study will help to realize the importance and significance of international accounting

● It will facilitate to understand the factors influencing the development of international accounting

● It will highlight the scope of international accounting

1.1 Introduction

Business enterprises get the reasonable, purposeful information from accounting and reporting for taking several business decisions in a compact and fruitful manner. Accounting and reporting provide necessary information about the economic and business health of a business organization by means of which not only the business organizations take business decisions more effectively and prudently but also the

users of accounting information used to take several crucial investment decisions and as such accounting is called the language of business. Business enterprises follow the accounting and reporting practices of a country to which it belongs. In international perspectives, it is observed that various countries of the world have diverse accounting and reporting backgrounds. The business enterprises operating in these different countries resort to diverse accounting and reporting practices of a particular country to which they belong which make it a real hurdle for the global users to understand the meaning and interpretations of global accounting and reporting of various enterprises. This very often makes the business decision making risky and inappropriate leading to business failure and jeopardy. The need for a uniform accounting and reporting practices crops up to mitigate the deadlock in understanding the diverse accounting and reporting practices followed by businesses across the globe. This has resulted in the emergence of international accounting and reporting practices to be developed and adopted by all as far as practicable in the global sphere to instill a uniform standard of accounting and reporting for ease in international comparison and better cross-border trade in the present era of free trade regime across the globe.

1.2 International Accounting–Definition and Concept

International Accounting is defined as the global process of accounting fitted with accounting principles and reporting practices keeping in view the best practices followed by different countries of the world. International accounting involves the process of accounting relating to international transactions and other operational activities of various organizations engaged in international trade and commerce by prescribing accounting principles and practices that should be followed for achieving excellence in accounting and reporting in international perspectives. International accounting refers to that system of accounting which incorporates several best practices for accounting and reporting purposes prevailing around the globe with an attempt to develop and inculcate a universal approach of accounting and reporting for overall acceptance and perception by all irrespective of the domicile of users of accounting information.

The evolution of international accounting has been the corner stone approach in maintaining and regularizing the process of accounting in international perspectives to match with the ultimate need of accounting to supply useful information to

different global users in a best possible manner. Accounting and reporting are highly intertwined to each other and are of great significance to deal with various issues related to business functions, growth and sustainability. A business cannot be expected to operate in an efficacious manner especially in the present era of international trade where trade is free from international protection by means of reducing the barriers to international trade and is very much exposed to both national and international competition unless it adopts the international practices and guidelines of accounting and reporting.

The various decisions concerning inflow of foreign capital, foreign exchange, use of foreign technology, cross-border trades etc. are very much dependent on the nature of accounting and reporting practices followed by an organization. The use of international accounting and reporting practices followed by an organization makes the organization a real harbour for international trade and foreign players become very much interested to maintain business relations with such an organization. The reason is very clear since by adopting the international accounting and reporting practices, the economic as well as financial health of such an organization becomes easily understandable and perceptible to the foreign players who can undertake international comparison for taking effective and viable economic decisions.

International accounting is a specially within the entire discipline that focuses on using specific accounting standards that are relevant in the country as they are when the books of accounts are balanced with foreign counterparts globally comparable accounting standard promote transparancy accountablity and efficiency in the financial market around the globe.

International accounting is not fundamentally different from traditional concept of accounting but it emphasizes on the method of accounting and reporting that can be globally accepted and understood fortified with the basic needs of integrity, comparability, transparency, understandability in accounting and reporting. Under the concept of international accounting there are thus several interacting issues like recording and translation of foreign transactions, convergence and harmonization of accounting standards followed by various global counterparts, preparation and promulgation of international accounting standards and international financial reporting standards etc. in tune with the international generally accepted accounting principles, conventions, practices followed by different countries of the world.

1.3 Need and significance of International Accounting

International accounting is very much concerned with identifying and highlighting the best international practices in accounting and reporting so as to maintain integrity, acceptability, understandability of accounting information by the global users. The present trend of free international trade has opened up and accelerated the scope of participation in foreign trade and commerce. Several small agencies, MNCs, corporate houses are found engaged in foreign trade across the globe. The participating firms, MNCs etc. belong to various countries which have distinct foreign exchanges, domestic accounting and reporting practices which are highly divergent. This very often leads to deadlock in understanding, interpreting and conceptualizing as well as communicating the accounting information conveyed by different firms operating in different countries since they are as diverse as the number of diverse economies take part in foreign trade.

Business firms intending to operate in international platforms used to face stringencies in garnering foreign capital, technology, foreign direct investment etc. because of the lack of understandability, information communication owing to maintaining of accounts and reports by the firms in their domestic patterns and techniques. Consequently, the complexities involved in domestic accounting and reporting practices lead to disruption in international trade and commerce. The diversity in accounting and reporting aggravates further with the participation of diverse economic entities in the international platform.

The role of international accounting is crucial and highly relevant to tackle the problems in managing diversity in accounting and reporting associated with international trade. Accordingly, international accounting under the aegis of various internationally reputed and accredited accounting and professional bodies like AICPA, IASB, FASB, IOSCO has formulated and issued several international accounting standards and financial reporting standards to cope with the operational complexities and diversities owing to socio-economic, political, cultural, technological and perceptual differences prevailing among the participating nations across the globe.

1.3.1 Needs of International Accounting

International accounting has its magnificent role in managing different issues

faced by different nations in international trade and commerce. Diversity in accounting and reporting in international sphere acts as a major threat to achieve success in foreign trade despite its liberty in the free trade regime. The use of different terminologies in accounting, different concepts for recognitions of assets and liabilities, diversity in recording of transactions, valuations etc. by different nations have the striking adversity to achieve success in international trade. The following are the needs for studying international accounting:

(a) International accounting significantly helps in outlining the ways and means to alleviate disparity in accounting and reporting practices followed by global firms.

(b) It facilitates the harmonization and convergence process of divergent accounting and reporting practices prevailing around the globe at par with the best practices recommended by various internationally reputed accounting and professional bodies.

(c) It helps to develop and formulate universally accepted accounting standards and financial reporting standards to reduce diversity in accounting and reporting across the national frontiers.

(d) International accounting highlights the methodology to be adopted in foreign currency translations to make the domestic financial accounting and reporting information more user-friendly and appropriate to help undertake viable economic and investment decisions by foreign counterparts.

(e) It helps to improve acceptability, understandability, transparency, comparability in accounting and reporting by removing divergence in accounting and reporting practices of the global participants in foreign trade.

(f) The universality in accounting and reporting practices fortified by international accounting helps to strengthen international trade by accelerating the pace of inflow of foreign capital, FDI, foreign technology etc. for the cause of resource mobilization in international platform.

(g) International accounting has the capacity to make international trade and commerce more fruitful and lucrative to the foreign traders because of the ease in cross-border trade by adopting the universally accepted international accounting and reporting practices.

(h) International accounting has made it possible to bring harmony in accounting and reporting practices by bringing various recognized accounting and professional bodies of the world to work together to devise and formulate universally accepted policies in accounting and reporting.

(i) The primary purpose of universally accepted, dependable, transparent, understandable, ethical and comparable accounting and reporting as well as disclosure requirements have got the momentum through international accounting across the globe.

1.4 Development in Accounting

The history of development in accounting around the globe has been long cherished consequent on the continuous improvement of business activities. Accounting has its classic role to respond to various socio-economic situations reflecting economic, legal, cultural as well as political environment within which the business activities operate and flourish. The issues related to business and societies are as diverse as the countries engaged in trade and commerce. In fact, the socio-economic status of a country is highly interdependent on the level of economic activities carried on through business and trade pertaining to a specific country. Business has a magnificent role to influence and represent the social lives of a nation since society and business are interrelated to each other and one without the effective co-ordination of other becomes ineffective and cannot grow and survive. As such, the social cultures, likes and dislike, socio-economic status, political situations etc. are reflected through the language of business i.e. accounting.

It is also to be mentioned here that the differences in socio-cultural-economic issues of various economies make the accounting practices highly divergent in nature around the globe. This diversity in accounting practices of several economies act as an impediment to international trade practices and make a barrier to foreign trade and commerce. To overcome this hurdle and to facilitate the free international trade, development of accounting practices has been very much significant. The international market players have given much emphasis to develop international accounting to provide a uniform platform of accounting practices to be followed by all participating international trade so as to ensure acceptability, understandability, comparability etc. in accounting and reporting.

1.4.1 Factors influencing the development of International Accounting

The domestic pattern of accounting followed by different world economies are as diverse as the number of countries that follow accounting and reporting practices as per the socio-economic-political environment prevailing therein. Developed economies like USA, UK, France, Germany etc. follow the accounting practices in a compact manner to give emphasis on investors' protection, shareholders' value creation, better corporate governance, and transparency in disclosure etc. by adopting US GAAP and/or International Standards on Accounting issued by IASB. While most of the underdeveloped economies fail to do so in their accounting practices and as a result, the diversity in accounting practices crops up to work as a barrier to international trade and thus boost up the need for development of international accounting.

The different issues that substantially influence the development of international accounting may be highlighted as below :

(a) Sources of Finance : Accounting practices vary greatly due to diversity in sources of finance. In many developed countries like UK, USA etc. equity market oriented finance in business is deeply noticed where accounting practices gives focus on shareholders' value creation, return on investment as well as protecting their interests to help take appropriate business decision and risk aversion. In contrast, many other economies like France, Germany, Japan etc. mostly depend on institutional finance from banks and other financial organizations instead of equity finance for business investments. In this mode of business finance, accounting practices concentrate on protecting the interests of creditors and suppliers' of finance by adopting conservative practices in accounting since the banks and other suppliers of finance significantly control the businesses and get in well-touch of economic information being part of insider management. Accounting and disclosure practices in such cases remain mostly confined and less-public.

(b) Legal System : The different legal systems prevailing in different countries make it highly inconvenient to operate in global market. Legal system refers to the system that describes how individuals and institutions interact with each other. Based on the nature of interactions between the individuals and

the institutions in carrying out economic activities, legal frameworks are planned and implemented. Some countries follow stringent code of conducts and are also applied in economic activities to maintain accounting and reporting in a robust manner. In such cases, business enterprises have to follow specific accounting and reporting practices strictly as per code while other countries are not in a position to follow these since they do not have code of conducts and rules but they have their common law based guidelines to follow. These common law based guidelines are sometimes found to be flexible and have laxity in many cases. This diversity in legal system needs the development of international accounting to ensure universal approach in accounting.

(c) Taxation Policy : Taxation policy followed by different world economies is independent in nature and scope. The economic result (business profit) is very often computed separately for accounting and tax purposes. Some countries determine profit uniformly for accounting and tax purposes while others determine accounting profit first and then by adjusting various expenses and incomes as per the existing tax laws compute taxable profits. In India, this practice is followed along with other nations. The use of accounting standards makes the difference in computing business profit significantly. The international taxation policy also has a great bearing in developing international accounting.

(d) Socio-economic-political Environment : The wide diversity in social and political status significantly changes the business operations and their accounting practices keeping in view the needs and aspirations of the society, its people and the political regime going on. The state of economy, economic environments, level of inflation, nature of economic institutions, people's participation, domestic market players and foreign market players including MNCs etc. of a country strongly influence the accounting practices followed by it. It is, therefore, very much important to develop international accounting to prescribe the use of accounting practices by every nation to ensure uniformity irrespective of the state of their socio-economic-political environment.

(e) Increasing Trend in International Trade : The economic liberalization and

free trade policy across the national frontier have zoomed up international trade significantly relating to free flow of goods, services and capital. Many nations, whether developed or under-developed, rich or poor have been found to join the international platform with much of enthusiasm to deal in foreign trade. This ever-increasing trend in international trade participation by various world economies spurs the complexities involved in different accounting practices followed by different countries. To overcome this difference in accounting practices, the development of international accounting is considered very much important so as to accelerate the international flow of capital.

(f) Diversity in Global Accounting and Reporting leading to Convergence Process : The wide diversity in global accounting and reporting practices seriously affect international trade for the difficulty in understanding and realizing the global accounting reports by different users. The convergence of accounting standards is aimed at reducing the difference in accounting and reporting practices followed by different world economies such that accounting and reporting become understandable, reliable and comparable to the users for taking appropriate economic decisions. The convergence of accounting practices is very much helpful to avoid ambiguity and lack of understanding by the global users of the accounting and reporting prepared by various countries as per their own sets of accounting and reporting rules and techniques. Development of international accounting is a step towards the convergence of accounting procedure across the globe to establish transparency and comparability in global accounting and reporting practices.

(g) Level of Education and Cultural Background : Level of education as well as cultural background significantly influence the development of international accounting process. Accounting and reporting practices based on highly sophisticated accounting standards followed by developed countries may not be easily understood by other nations. Development and implementation of international accounting is considered very much important to help the culturally and educationally backward nations understand and conceptualize the highly standardized accounting and reporting in a much more competent manner to take appropriate economic decisions.

1.5 Scope of International Accounting

The international accounting is much wider in scope and application consequent on the global need of it to cover different aspects on accounting and reporting across the globe. International accounting is aimed at providing guidelines to make the diverse accounting and reporting practices to merge into a unified system to ensure reliability, acceptability, comparability and adaptability of accounting information by the different stakeholders. The operational activities of international accounting looks forward and directs the manner and philosophy of recording international transactions, translation of foreign currency, preparation of inflation adjusted financial statements, accounting for transfer pricing, consolidation of foreign financial statements, foreign exchange risk management, international taxation etc. How international accounting assists these areas to make them fit for international acceptance may be described as follows :

(a) Recording of international transactions : International transactions include transactions on export and import of goods and services, foreign lending and borrowing, conversion of one foreign currency into another foreign currency, foreign investments, unrequited money transfer etc. entered into between two or more foreign countries. International accounting starts with providing the guidance to record these transactions in line with the best international practices and standards. While prescribing the recording modalities of these transactions, international accounting highlights two approaches – single approach and dual transactions approach based on the dates of incurring the transactions viz. initial transaction date, interim reporting date and transaction settlement date.

(b) Foreign Currency Translation : Foreign currency translation is the approach to convert the financial information of the foreign subsidiary of a parent company to the reporting currency of the parent company. Financial statement consolidation process by means of foreign currency translation is one of the key activities of international accounting. The translation of foreign currency is very much helpful for performance evaluation of globally dispersed subsidiaries of a parent company by restating the financial information and reports of the subsidiaries into the currency of the parent company. Foreign currency translation process is inherently concerned with the identification

of functional currency of the foreign subsidiaries so as to restate the financial statements of the foreign entities into the reporting currency of the parent company and thereafter to record the gains and losses of the translation process.

(c) Global Inflation : The level of inflationary situations prevailing in different parts of the globe significantly influences the development of international accounting. Price level changes across the global market frequently change the purchasing powers of goods and services and also distort the contents of financial statements representing profit figure, statement of affairs etc. International accounting provides the necessary guidelines to adopt measures to neutralize the impact of inflation on financial information. This is very much needed to make global financial reporting more acceptable and comparable to all in global spheres.

(d) Global Financial Statement Analysis : Analysis of global financial statements which are prepared by various countries on the basis of their different accounting and reporting practices is highly relevant for the global users. This is so because the contents and manner of presentation of the global financial information are highly divergent and imperceptible in many cases to others. With the help of international accounting, analysis of global financial statements becomes really conducive to understand and interpret for taking appropriate economic decisions by the different users.

(e) Segment Reporting : Segment reporting is an approach to report on various business segments based on geographical locations or on operational activities to disclose specific segmental information for better appraisal. International Accounting Standard 14 clarifies the classification of business into identifiable segments as also their accounting and disclosure practices for effective assessment and economic appraisal of different segments.

(f) Transfer Pricing : In international transactions, transfer pricing occupies a crucial role. Multinational corporations working in different countries adopt transfer pricing as a measure to off-set the tax jurisdictions applicable in different countries. IAS 14 on segment reporting defines transfer pricing as "the pricing of products and services between industry segments or geographical areas'. International accounting highlights the adjustment

process to reassess international financial results of multinational corporations which undertake transfer pricing mechanism.

(g) Consolidation of Foreign Financial Statements : Consolidated financial statements disseminate financial results and financial positions of a group of interrelated companies as a unified whole for better understanding of the group performance by the different stakeholders. Preparation of consolidated financial statements of various interrelated business corporations working in different countries makes the consolidation process complex because of using different accounting backgrounds by the global parent corporations and their subsidiaries. International Accounting Standards 27 prescribes the detail procedure for the preparation and presentation of consolidated financial statements from the accounts of various foreign corporations in a uniform base for the overall benefits of different users in a fair and transparent manner.

(h) Foreign Exchange Risk Management : Foreign exchange risk management is another important issue where international accounting has its role to play. Foreign exchange risk management of an enterprise is primarily concerned with monitoring and managing foreign exchange exposure with a view to maximize profitability, capital inflow and market value etc. International accounting with its vast exposure on global foreign market gives the necessary guidelines to control and manage foreign exchange risk.

1.6 Summary

International accounting is the process of conceptualizing and monitoring the global accounting and reporting issues to blend into a unified whole system to be used by all for better understanding, comparing and transparency in accounting and reporting. International accounting is that branch of accounting which deals with recording and translation of foreign transactions, preparation and presentation of consolidated foreign financial statements at par with international GAAP and reporting practices. International accounting significantly helps in achieving harmonization of accounting and reporting practices across nations and this gives immense benefits to the investors and other global market players to take appropriate economic decisions in a much more informed manner.

Development of international accounting has become the prime issue to keep pace with the emerging trend of global trade, inflow of foreign capital, harmonization of accounting and reporting practices. International accounting looks for globalization of accounting and reporting practices by use of international accounting standards and practices. Diversity in accounting and reporting practices followed by various countries of the globe is systematically off-set by the adoption of international accounting standards. Various issues like recording of foreign exchange transactions, adjustment of foreign financial statements against inflation, consolidation of foreign financial statements, adjustment for transfer pricing methodology adopted by MNCs, foreign exchange risk management, segment reporting and many other concurrent issues fall within the scope of international accounting.

1.7 Key Words

Development of Accounting : Development of accounting refers to the improvement in accounting system to match accounting with the global scenario concerning economic, legal political and cultural environment.

Foreign Currency Translation : It the process of translating or restating financial information of global firms from one foreign currency into another as per requirement for better understanding and interpretation by the global users.

International Accounting : International accounting is defined as that branch of accounting which deals with the recording and accounting of foreign transactions keeping in view the best practices followed by different countries of the world.

Segment Reporting : Segment reporting is the approach to report on various business segments /units based on their geographical location or on the basis of their operational activities for better performance evaluation of the segments.

Taxation Policy : It refers to the policy for the purpose of levying tax on economic activities and financial results of taxpayers.

Transfer Pricing : It is the pricing adopted by multinational companies with the objective to minimize global tax liability.

1.8 Exercises

1. What do you mean by international accounting?

2. State the importance of international accounting.

3. What is meant by development of international accounting?

4. Explain in brief the different factors that influence the development of international accounting.

5. Define the concept of international accounting. State the needs of international accounting.

6. Explain the scope of international accounting in the present era of globalization.

7. Write short notes on –

    (a) Significance of International Accounting

    (b) Segment Reporting

    (c) Foreign Exchange Risk Management

    (d) Consolidation of Foreign Financial Statement

Unit - 2 ❑ International Accounting Convergence

Structure

2.0 Objectives

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2.2 Convergence-meaning and concept

2.3 Need and Significance of Convergence

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2.8 Global Convergence of Accounting Standards

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2.9 Summary

2.10 Key Words

2.11 Exercises

2.0 Objectives

The objectives of studying Unit-2

- To understand the meaning and concept of convergence of international accounting standards
- To conceptualize the meaning of convergence and harmonization of accounting standards
- To identify the needs and significance of convergence of accounting standards
- To understand the benefits and challenges of convergence of accounting standards
- To know the organizations involved in the convergence process of international accounting standards

2.1 Introduction

The world wide wave of globalization and liberalization has made the universe a single market for participation in international trade. Global market players are now free to enjoy trade with other nations without any barricade as regards flow of goods, services, capital, manpower and technology etc. But this free interplay between global partners may not be really conducive and fruitful and in fact creates hindrance to flourish if the level and the manner of accounting and reporting practices followed by different nations vary greatly. This makes the convergence of accounting standards a reality to overcome the situation. As such, the international convergence of accounting standards is considered very much significant to implement a single set of high quality accounting standards that can suit every nation as regards simplicity, understandability, transparency, reliability etc. of accounting and reporting information practiced and disclosed respectively to remove the barriers in inflow of goods, services, capital etc. in cross border trade. Various premier accounting and professional bodies around the globe have come forward to devise and set up universally accepted accounting standards to be followed by different nations for the preparation and presentation of accounting and reporting information in an all-inclusive manner for the satisfaction of all.

2.1 Convergence–Meaning and Concept

In simple term convergence refers to the act of merging one thing with others. The convergence of accounting standards refers to the goal of establishing a single set of high quality accounting standards that can be used internationally to ensure transparency, comparability, reliability, materiality, understandability in accounting and reporting. Convergence in some form or other has been taking place for several decades, and efforts are being taken by harmonizing the diverse accounting practices with the aim to reduce the differences between accounting standards.

Convergence is driven by several factors, including the belief that devising a single set of accounting requirements would increase the comparability of different entities' accounting information and will also boost up transparency and easy understanding of financial information, which will contribute to the inflow of foreign capital on national frontier and also a lot of benefits for the different stakeholders.

2.1.1 Harmonization and Convergence

The two terms 'harmonization' and 'convergence' are used interchangeably and are almost considered synonymous since the difference in between these have become thin and blurred in the present era of globalization and continuous demand to increases stakeholders' confidence and understandability in the context of cross-border trade. Harmonization refers to the attempt to alleviate the disparities in financial reporting practices followed by different countries for maintaining their own set of accounting and reporting norms which are influenced by their socio-economic, cultural, political and legal systems existing therein. Harmonization is the process of increasing the compatibility of domestic accounting practices with that of the best global standard accounting practices so as to maintain a harmony in accounting and reporting around to globe to observe global comparability, understandability and transparency to the maximum possible level. In harmonization process, domestic set of accounting rules and standards are not given up

In the content of financial accounting, covergence is the process of harmonising accounting standards issued by different regulatary bodies. The objective is to produce a common set of accounting standards to enhance the consistency, compar and efficiency of financial statements.

completely and but they are made compatible with the global rules and standards by means of adaptation.

However, convergence is the process of formulating a single set of high-quality universally accepted accounting and reporting standards to ensure greater transparency, reliability, understandability and comparability in accounting and reporting. In convergence process, the domestic/national set of accounting rules and standards are set aside and emphasis is given on adopting the IFRSs in exchange thereof to comply with the single set of high-quality universally accepted accounting and reporting standards to ensure investors' credibility, to accelerate free flow of foreign capital and technology so as to usher greater transparency, reliability, understandability and comparability in cross-border trade.

Businesses in the United States prepare their financial statements in accordance with generally accepted accounting principles, or GAAP. Businesses in more than 100 other countries use a different set of rules, called International Financial Reporting Standards, or IFRS. Long-running efforts to bring these two sets of rules into alignment have been referred to as both harmonization and convergence. GAAP and IFRS have a great deal in common, but there are some major areas of differences. These areas include, amongst others, inventory valuation methods; processes for valuing and impairing (writing down) assets; accounting for research and development costs; and depreciation rules etc. In an era when investment regularly crosses national boundaries, the major standards-setting bodies -- the U.S. Financial Accounting Standards Board and the International Accounting Standards Board -- want to bring the two systems in line with each other so the same rules apply to all companies irrespective of their sizes, countries of operation.

2.3 Need and Significance of Convergence

Accounting and reporting practices have been developed and practiced by different global economies as per their states of socio-cultural background, economic conditions, political diplomacies etc. prevailing therein. It has been highly observed that the accounting and reporting around the globe are as diverse as the numbers of economies are involved. This has led to wide diversity in accounting and reporting activities across the globe which makes it an impediment to achieve global success. Thus a need arose for standardization and convergence to enable users of accounting

reports understand them properly and be in position to compare the accounting statements of one company with those of another. It is highly recognized that the diversity in global accounting and reporting practices have to be removed to offer a commonly accepted accounting practice for the benefit of all in terms of simplicity, comparability, understandability, transparency and reliability in accounting and economic information.

The ultimate goal of convergence in international accounting is centered towards the formulation of a universally accepted set of global accounting and reporting standards by making these binding to all nations as far as practicable. The convergence of international accounting standards is highly necessitated in the present realm of globalization and liberalization where international market players face stringency in realizing and interpreting the global accounting and reporting information prepared under different accounting concepts and methodologies. Global convergence of accounting standards will significantly reduce the diversity in accounting standards followed by different countries. International Accounting Standards are authoritative guidelines aimed at narrowing the areas of differences and diversities in global accounting and reporting practices. Convergence of international accounting standards becomes very much helpful to the global investors to take appropriate economic decisions in a much more compact and informed manner. The multinational companies will be benefited to enter into more global markets with least of problems to comply with the rules and regulations of global capital market.

2.4 Benefits of Convergence of Accounting Standards

Convergence of accounting standards is a process by which the diversities in accounting practices followed by different global economies in areas like recognition, measurement, recording of events and transactions are sought to be removed by devising universally accepted practices for the sake of maintaining transparency, reliability, comparability etc. The global convergence of accounting standards is really helpful to augment the free follow of foreign capital in national frontier, to accelerate the pace of international trade, to encourage the multinational companies to ease up their compliance to global rules and formalities to concentrate on global trade practices and also to enhance stakeholders' confidence and reliability in taking viable economic decisions.

The benefits of convergence of accounting standards may be highlighted as below:

(a) Greater comparability : The convergence of international accounting standards will provide improved comparability among different entities' financial statements. Higher is the comparability of accounting information, greater is the scope for optimizing investment decision.

(b) Lower transaction cost : The overall transactions costs will be lower for the preparers of financial reports, since they are entrusted to comply with a single set of universally accepted accounting standards, instead of maintaining multiple sets for different users at national and international levels.

(c) Reduced supplementary information : Convergence significantly cut short the costs of doing business across national boundaries by reducing the need for supplementary information.

(d) Greater transparency and disclosure responsibility : The convergence of international accounting standards will help to escort transparency in accounting and reporting practices with greater accountability and disclosure responsibility.

(e) Higher efficiency in capital inflow : High-quality financial reporting standards that are used consistently throughout the world will improve the efficiency of capital allocation and the inflow of foreign capital will boost up since the foreign investors will be in better understanding of accounting information generated under international standards.

(f) Improved investment decision : The convergence of international accounting standards motivates the investors to take investment decisions wisely by interpreting the global accounting information in a much more compact manner and their investment portfolio will be more diverse and will have less financial risk.

(g) Credibility of financial reporting : Internationally converged accounting standards also help maintain credibility of financial reporting to the public and increase the efficiency of auditing work. The overall credential of different stakeholders will increase in the era of convergence.

(h) Scope for global mergers : Convergence of accounting standards can

influence the multinational companies to take decision making strategies in the areas of global mergers and acquisitions to flourish international trade.

2.5 Challenges and Difficulties in Convergence of Accounting Standards

The issue of convergence of accounting standards has challenges and difficulties so far as the question of adopting a single set of global accounting standards is concerned for all the nations. The following are the challenges of international accounting convergence :

(a) Wide diversity in accounting and reporting : There are wide diversity in accounting and reporting practices followed by different countries and this diversity is due to significant differences in socio-cultural background, economic and political status etc. prevailing therein amongst others. A single set of standard accounting practice devised for all may not be equally applicable to each and every nation to adopt.

(b) Complexity in global tax laws : There are many nations that follow different tax laws and have different tax legislations to identify taxable identities and measure taxable events. Some countries follow tax considerations for all types of taxable events, both domestic and foreign, while there are countries that do not charge tax on foreign taxable events and are called tax havens. All these make the convergence process a highly typical task and a challenging one.

(c) Disparity in disclosure requirements : There exists diversity in disclosure laws of different countries; some are found to be lenient in disclosure requirements while others are found to be stringent in their disclosure practices. The adoption of universal international accounting standards may be a stressful exercise to those countries where there is laxity in disclosure requirements and they may be highly reluctant to the convergence process.

(d) Lack of interpreting global information : Interpretation of global financial information based on international global standards is a hard task since it requires a clarity and knowledge of global accounting and reporting practices. All nations may not have the requisite skill and knowledge base at their

disposal to understand and interpret the global financial information. Proper training and skill development is highly needed which may not be possible to all.

(e) Lack of flexibility in applying international standards : Globally converged accounting standards are more or less rigid considering the formulation of a single set of universal accounting practices to be abided by all. However, due to the lack of its flexibility in approach, globally converged accounting standards may not be adopted by all nations for their sharp differences in socio-cultural background, economic and political status and many other factors.

(f) Deficiency of accounting and auditing personnel : Effective implementation of globally converged accounting standards across the globe may be seriously hampered due to the deficiency of adequate number of expertise in accounting and auditing who may extend their whole-hearted co-operation in the convergence process.

2.6 Participation of International Organizations in the Convergence Process

Many internationally famous and premier institutional bodies around the globe are found to be associated with the convergence of accounting standards. Six organizations have become the major players in the formulation of international accounting standards and in promoting international accounting convergence:

1. International Accounting Standards Board (IASB)

2. European Union (EU)

3. International Organization of Securities Commission (IOSCO)

4. International Federation of Accountants (IFAC)

5. United Nations Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR), part of the United Nations Conference on Trade and Development (UNCTAD)

6. Organization of Economic Cooperation and Development Working Group of Accounting Standards (OECD Working Group)

2.6.1 International Accounting Standards Board

International Accounting Standards Board (IASB) is an independent private sector standard setting organization. It was formerly known as International Accounting Standards Committee (IASC) which was founded in 1973 by professional accounting organizations in nine countries and was restructured in 2001. Before its restructuring, the IASC issued 41 International Accounting Standards (IASs) and a Framework for the Preparation and Presentation of Financial Statements. The IASB started its full fledged functions in standard setting from April, 2001 with representations of accounting organizations from several countries (approximately from 100 countries) to work together in devising accounting standards. With the help of remarkable and broad base support across the globe, IASB has become the linchpin in international accounting standard setting.

The IASB Standards follow the principles of fair representation and full disclosure and have wide compatibility with the accounting standards promulgated in the US, UK, Canada and many other countries that use Anglo-Saxon accounting. Being an independent standard-setting body of the International Financial Reporting Standards (IFRS) Foundation, the IASB is responsible for the development and publication of IFRSs and for approving Interpretations of IFRSs as developed by the IFRS Interpretations Committee. The IASB operates under the oversight of the IFRS Foundation.

2.6.1.1 Objectives of IASB

The objectives of IASB may be highlighted as below :

(a) To develop in the public interest, a single set of high quality, understandable and enforceable global accounting standards which require high quality, reliable, transparent as well as comparable information in financial statements and other financial reporting to help participants of the global capital markets and other users take economic decisions;

(b) To promote the use and application of these standards rigorously across the nations;

(c) To bring about the convergence of national accounting standards and International Accounting Standards and International Financial Reporting Standards towards high quality solutions to remove divergent accounting and reporting practices followed around the globe;

(d) To inculcate the practice of adopting universally accepted accounting standards to ensure harmonization in global accounting and reporting.

Role of IASB :

International Financial Reporting Standards (IFRSs) have become widely accepted across the globe. Many countries have started using IFRSs as the basis of their national accounting requirements and as the international benchmark of accounting and reporting. Under the IFRS Foundation Constitution, the IASB has complete responsibility for all technical matters of the IFRS Foundation including :

(i) Full discretion in developing and pursuing its technical agenda, subject to certain consultation requirements with the Trustees and the public

(ii) The preparation and issuing of IFRSs (other than Interpretations) and exposure drafts, following the due process stipulated in the Constitution

(iii) The approval and issuing of Interpretations developed by the IFRS Interpretations Committee.

Structure of IASB :

The restructured IASB includes the following bodies to help in the process of development and publication of IFRSs- (1) Trustees, (2) IASB Board, (3) Standards Advisory Council and (4) International Financial Reporting Interpretation Committee (IFRIC). The roles and functions of the different bodies of IASB may be discussed as follows :

1. Trustees : The IASB has 22 trustees at present representing 6 from North America, 6 from Europe, 6 from Asia/Pacific region and 4 from any area to establish a balanced approach in geographical representation. The trustees appoint the members of the IASB, the International Financial Reporting Interpretation Committee and the Standards Advisory Council. The trustees are entrusted to raise fund for IASB and also to supervise and review the priorities and operations of the IASB including the approval of its annual budget.

2. IASB Board : The IASB Board develops and improves standards of financial accounting and reporting for businesses. The IASB Board is entrusted with full responsibility for all IASB technical matters including

the preparation and issuing of IASs, IFRSs, and Exposure Drafts etc. and also the final approval of interpretations by the IFRIC. Besides, the IASB Board is also responsible for approval of project proposals, methods and procedures for developing standards. The IASB Board is composed of total 14 members of which 12 are full time members and 2 may be part time. All the members are appointed for a 5-year term, renewable once.

3. Standard Advisory Council : The Standard Advisory Council, appointed by the trustees, is composed of 30 members or more for a renewable term of three years, having a diversity of geographic and professional backgrounds. The members of the Standards Advisory Council usually meet three times a year. The Council is responsible to give the board advice on its agenda and priorities and also to inform the board of the views of different organizations and individuals on the Council on major standards setting projects and to give other advice to the Board or the trustees.

4. International Financial Reporting Interpretations Committee (IFRIC) : The IFRIC is composed of 12 members who are appointed by the trustees. The IFRIC takes the responsibility to interpret the application of IASs, IFRSs in the context of IASB's framework and to publish draft interpretations, to review public opinions and moments on them as well as to obtain board approval for final interpretations.

2.6.2 European Union (EU)

The European Union was established consequent on the Treaty of Rome in 1957. At present, EU comprises 27 member countries with the goal of harmonizing the legal and economic systems of its member states. The EU uses two instruments- Directives and Regulations for achieving the objectives of convergence. One of the goals of EU is to achieve integration of European financial markets. To this objective, the EU has introduced directives and undertaken major new initiatives to achieve a single market for :

  (i) raising capital on an EU-wide basis;

 (ii) establishing a common legal framework for integrated securities and derivatives markets; and

(iii) achieving a single set of accounting standards for listed companies.

The EU's Fourth Directive, issued in 1978, is the broadest and most comprehensive set of accounting rules within EU framework and includes format rules for financial statements, disclosure requirements and valuation rules applicable to both public and private companies. The Fourth Directive of EU aims to ensure that European companies disclose comparable and equivalent information in their financial statements. The Seventh Directive of EU, issued in 1983, emphasized the issue of consolidated financial statements for group of companies above a certain size to disclose specific notes including directors' report appended therein. The Eighth Directive of EU gave focused attention on various aspects of the qualifications of professionals authorized to carry out statutory audits by auditors having the minimum prescribed qualification.

2.6.3 International Organization of Securities Commissions (IOSCO)

The International Organization of Securities Commissions (IOSCO) which was formed in 1983 consists of securities regulators of more than 100 countries. IOSCO has vehemently emphasized on international disclosure and accounting standards to facilitate the ability of companies to raise capital efficiently in global securities markets. To this objective, IOSCO in 1998 published a set of non-financial disclosure standards that may eventually enable companies to use a single prospectus for listing of shares on any of the world's major capital markets.

In the light of the preamble of IOSCO's bye-laws, securities authorities of various countries decided to work together in a common platform to ensure better regulation of the markets, both domestic as well as international market, for the following purposes :

(a) To exchange information and opinion on the basis their experiences to promote and develop domestic markets to maintain just, efficient and sound markets;

(b) To apply their concerted efforts to establish standards and an effective surveillance of international securities transactions;

(c) To provide mutual assistance to ensure the integrity of the markets by a vigorous application of the standards and by effective enforcement against offences;

(d) To focus on the recommendations of IOSCO technical committee on

multinational disclosure and accounting to facilitate the growth of global capital markets.

2.6.4 International Federation of Accountants (IFAC)

The International Federation of Accountants (IFAC) is a worldwide organization with 159 member organizations spread over 123 nations, representing more than 2.5 million accountants. It was established in 1997 at the Eleventh Congress of World Accountants. The council, which meets twice a year, sets IFAC policy and supervises its operations. The IFAC has been working with full integrity to develop qualitative international standards, to support its adoption and use, to maintain effective co-ordination with member organizations, to maintain liaison with other international bodies and also to act as international spokesman for the accountancy profession to flourish.

In tune with the emerging needs of international accounting and auditing consequent on the continuous growth of global trade and commerce, the responsibilities of IFAC have been multiplied over the years to frame rules and regulations and to design upgraded standards to regulate and monitor the international accounting profession to work in a creditable manner. Accordingly, the IAFC has taken measures in formulating- (a) International Auditing and Assurance Standard Board; (b) International Code of Ethics; (c) International Education Standards; (d) International Public Sector Accounting Standards; (e) International Professional Accountants Standards, and (f) International Compliance Standards etc.

Based on the philosophy of high-quality auditing standards being necessary for the rigorous interpretation and applications of accounting standards, IFAC set the following objectives :

(a) To implement credible financial reporting for the efficient functioning of capital markets;

(b) To develop international accounting and auditing standards for optimal harmonization at global level;

(c) To support the development of accounting profession with harmonized standards to help them render high quality and reliable services to the public.

2.6.5 United Nations Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR)

ISAR was established in 1982 and it is the only intergovernmental working group devoted to accounting and auditing at corporate levels. As its specific mandate, the ISAR targeted to promote the harmonization of national accounting standards for enterprises. For achieving the mandate, ISAR has formulated and promulgated best accounting practices in consultation with IASB. ISAR was the pioneer in conceptualizing the environmental reporting by business enterprises as a part of their corporate social responsibility performance and has given focused attention of corporate governance and accounting practices to be followed by small and medium enterprises. To accelerate the global harmonization of accounting practices, ISAR has conducted global technical assistance projects in areas like accounting reforms and retraining and also in designing and developing a long-distance learning programme in accountancy in countries such as Russia and Africa.

2.6.6 Organization for Economic Cooperation and Development (OECD)

OECD is the international organization of the industrialized, market economy countries. The OECD functions through its governing body, the OECD Council, and its network of about 200 committees and working groups. Through its biannual publication Financial Market Trends, OECD assesses trends and prospects in the international and major domestic financial markets and prescribes the structure and regulation of securities markets so as to operate in a compact and effective manner. In1976, the OECD had issued a code of conduct entitled 'Declaration on International Investment and Multinational Enterprises' for financial reporting practices to be flowed by MNCs.

In the context of accounting, OECD formed an Ad hoc Working Group on accounting standards in 1979 with the objectives:

(a) To support current efforts by international, regional and national bodies towards harmonization of accounting practices;

(b) To function as a forum for the exchange the views on UN efforts on accounting and disclosure standards;

(c) To provide technical clarification to the terms used in disclosure guidelines.

2.7 Other Regional Accounting Organizations

Accounting Organizations are typically not-for-profit with the mission of serving the accounting industry and the interests of professionals in accounting. Large number of regional accounting organizations are found to operate in different parts of the globe with the noble mission to achieve convergence in accounting and reporting practices for the benefits of global stakeholders so as to supply them transparent, reliable, comparable and standardized accounting information to help them take legitimate economic decisions especially with reference to international transactions. The following are names of some recognized regional accounting bodies around the globe:

1. American Institute of CPAs, USA
2. Arab Society of Certified Accountants, Jordan
3. Canadian Institute of Chartered Accountants, Canada
4. Chinese Institute of Certified Public Accountants, China
5. Conseil Supe`rieur de l'Ordre des Experts, France
6. Institut der Wirtschaftsprufer in Deutschland, Germany
7. Institute of Chartered Accountants of India, India
8. Institute of Chartered Accountants in Ireland, Ireland
9. Institute of Chartered Accountants of New Zealand, New Zealand
10. Institute of Certified Public Accountants of Singapore, Singapore
11. Institute of Chartered Accountants of England and Wales, UK
12. Institute of Commercial and Financial Accountants of South Africa, South Africa
13. Japanese Institute of Certified Public Accountants, Japan
14. Korean Institute of Certified Public Accountants, Korea
15. Malaysian Institute of Accountants, Malaysia

2.8 Global Convergence of Accounting Standards

In recent times, significant progress has been made towards achieving one set of universally accepted financial reporting standards. There is a growing realization

that a globally accepted common financial reporting language will significantly usher economic growth by enhancing the efficiency of global capital markets. The convergence movement is the logical extension of harmonization of accounting and reporting practices that started its journey in the early 1990s. This movement has however made the challenges related to the convergence of the accounting standards more apparent than ever before. Convergence of international accounting standards is very much important to achieve global uniform accounting and reporting practices to ensure investors' credibility.

The term global convergence of accounting standards refers to the goal of establishing a single set of accounting standards that will be used internationally, and in particular the effort to reduce the differences between the US generally accepted accounting principles (US GAAP) and the International financial reporting standards (IFRS). Convergence means to achieve harmony with IFRSs and more specifically convergence can be explained as the concerted activity to design and maintain national accounting standards in a manner that will comply with all the requirements of IFRS.

In fact, after 1990s, the focus shifted from harmonization to convergence. In convergence, the ultimate goal is for GAAP and IFRS to come together in a single set of standards that would apply everywhere. There would no longer be a distinct GAAP or IFRS. However, convergence does not just involve GAAP. Several other major economies do not follow IFRS, including Japan and China. International convergence efforts are intended to bring those countries into the same set of international standards as well.

Convergence is taking place in various countries, with over 100 countries having made public commitments supporting convergence towards the International Financial Reporting Standards (IFRS). Efforts towards convergence include projects that aim to improve the respective accounting standards, and those that aim to reduce the differences between them.

Adoption would mean full-fledged use of IFRS as issued by the IASB by the Indian public companies. Convergence means that the Indian Accounting Standards (AS) and the International Financial Reporting Standards (IFRS) would, over time, continue working together to develop high quality, compatible accounting standards.

2.8.1 Status of Global Convergence of Accounting Standards

International Financial Reporting Standards (IFRS) have already been adopted in many countries, and are in the continuous move to be adopted by many other countries of the globe. Some countries are working with the International Accounting Standards Board (IASB) to converge their own standards with IFRS. Globally, the adoption of IFRS ranges from the total adoption of IFRS in some countries to the requirement for adoption of local Generally Accepted Accounting Principles (GAAP) in other countries. In between, countries display varying levels of commitment to IFRS including the adoption of local versions of IFRS, a requirement for certain entities to use IFRS, permission to use IFRS, and in some instances the use of local GAAP that is converging with IFRS.

The recent highlights about the adoption of IFRS convergence may be described as below:

- In North America, the US Securities & Exchange Commission accepts IFRS for non-US registrants, Canadian listed companies are required to use IFRS commencing January 1, 2011, while Mexico announced plans to move to IFRS in 2012;

- In Europe, the European Union (EU) requires companies listed in the EU countries to adopt IFRS beginning with their 2005 financial statements;

- In Central America, companies are required to use IFRS;

- Some South American countries require the use of IFRS, others require the use of IFRS as adopted locally, while others are moving towards convergence of local standards with IFRS;

- In Asia and the Middle East, some countries require reporting under local GAAP, some require the use of IFRS as adopted locally, while others are moving towards convergence of local standards with IFRS;

- In Oceana, local reporting entities are required to use IFRS as adopted locally; and

- In many African countries, listed companies are required to use IFRS.

2.8.2 Advantages of Global Convergence

Moving to a single set of global financial standards through global convergence process would be highly conducive to companies for better performance in global

capital markets. It would be helpful to influence free movement of foreign capital across the national frontier since by means of global convergence the foreign investors would more capable of understanding and comparing global accounting and reporting information. The benefits of global convergence of accounting standards may be stated as follows :

(a) Global convergence improves investors' confidence across the world with greater transparency and comparability;

(b) It significantly facilitates the inter-firm or inter-industry comparisons to boost up investors' economic decision making process in a competent manner;

(c) Global convergence makes easy the group consolidation by means of using same standard by all companies in a group wherever located;

(d) Preparation of financial statements through global convergence process accelerates cross-border capital market listing of domestic securities and stocks;

(e) Compliance to foreign securities markets becomes more concrete by means of reports, returns and other relevant financial as well as non-financial information prepared in the light of universally accepted global standards;

(f) Global convergence creates a favourable ambience to domestic market players to enter into global market more competently by presenting financial statements in a globally accepted format.

2.8.3 Disadvantages of Global Convergence

There are disadvantages and in fact, some barriers to the development of one universally accepted set of Financial Reporting Standards that can be applied by all global enterprises. Convergence to one universally accepted set of standards has been hindered by many factors. The disadvantages of global convergence may be described as follows:

(a) There is one significant factor that standard-setting bodies and regulatory authorities tend to have different views or apply different frameworks while developing standards because of disparities in their socio-economic condition and cultural background;

(b) Different countries around the globe may not be able to afford adequate finance, time and mental stability to work for adopting global convergence spontaneously;

(c) Resistance to global convergence often crop up from strong industry lobbying groups and other stakeholders who consider it a painstaking process;

(d) Political pressure may deter the convergence process on the assumption that by adopting convergence, the independence of domestic accounting standards board may be hampered and the foreign accounting and reporting practices would create corporate deadlock and information jugglery.

(e) Conversion can be costly for companies. Changes in technology, tax reporting requirements and compensation systems are a few areas that may prohibit the conversion process.

(f) Standards must be applied consistently and enforcement must be uniform, otherwise, a single set of standards may appear to exist but will lack from desirable attributes such as transparency, understandability, comparability and consistency etc.

2.9 Summary

Convergence of International Accounting Standards or in other words Internationalization of Accounting Standards is highly relevant for maintaining a globally acceptable accounting and reporting practices for the sake of achieving transparency, reliability, understandability and comparability in accounting and reporting information by every nation. Accounting standards are the policy documents issued by recognized expert accountancy bodies relating to various aspects of measurements, valuations, treatments and disclosures of accounting transactions and events. Wide diversity is noticed around the globe in the context of accounting and reporting practices that create serious deadlock in cross-border trade, flow of foreign capital and technology in national frontiers. Thus, a need cropped up for standardization and convergence of accounting standards to enable the different users of global accounting reports to perceive and interpret these properly in a comparative manner

for taking appropriate economic decisions. It is extremely difficult and in many cases impossible, for fair comparisons to be made between companies from different countries due to use own set of accounting and reporting standards.

Convergence of international accounting and reporting standards is very much significant for cross-border trade since by means of achieving convergence, the burden of financial reporting would be lessened and the cost of financial statement preparation would be reduced. It is also important to market regulators and stock markets to reduce uncertainty about the comparability of published accounts thus enhancing transparency and investors' credence and helps in making informed economic decisions about the business enterprises.

International Financial Reporting Standards (IFRS) have become the global standard for preparation of public company financial statements. The International Accounting Standards Board (IASB) has developed IFRS standards which are highly compatible for use by global firms to disclose their financial as well as non-financial information in a much more compact and user-friendly manner. Many of the world economies have adopted IFRSs as a measure to comply with the global means of reporting and accounting in affair and dependable manner. Though convergence of international accounting standards has some advantages, it has limitations as to its implementation because of diversity in socio-economic, political, cultural and legal framework prevailing in different countries.

But for the sake of investors' protection, for increasing the investors' credence, for improving the investors' ability to compare and interpret global financial accounting and reporting prepared under different accounting backgrounds and in consequent to increase their capabilities to take global business decisions firmly, it is highly recommendable and desirable too, to undertake global convergence of accounting standards with much emphasis. Ultimately, the global convergence of accounting standards will augment inflow of foreign capital and improve foreign trade for the greater interests of less-developed economies o f the world.

2.10 Key Words

Convergence : Convergence is the act of merging one thing with others. The convergence of accounting standards is the act of establishing a single set of high

quality accounting standards that can be used internationally to ensure transparency, comparability, reliability, materiality, understandability in accounting and reporting.

Global Convergence : Global convergence is based on the realization that a globally accepted common financial reporting language is inevitable to achieve economic growth by enhancing the efficiency of global capital markets. The convergence movement is the logical extension of harmonization of accounting and reporting practices around the globe to ensure investors' credibility as well as to ensure their protection.

IAFC : International Federation of Accountants (IFAC) is a worldwide organization engaged to develop qualitative international standards and their adoption, to maintain effective co-ordination with member organizations and other international bodies to help develop accountancy profession.

IASB : International Accounting Standard Board (IASB) is an independent private sector accounting body which formulates and develops International Financial Reporting Standards.

IOSCO : The International Organization of Securities Commissions (IOSCO) is an international organization with exposure to international disclosure and accounting standards to facilitate the ability of companies to raise capital efficiently in global securities markets.

2.11 Exercises

1. What do you mean by Convergence of Accounting Standards?

2. State the needs and importance of Convergence of Accounting Standards.

3. What are the benefits of Convergence of Accounting Standards?

4. What are challenges and difficulties in Convergence of Accounting Standards?

5. State the role of international organization for participating in the convergence process.

6. What is IASB? Highlight the role of IASB in the convergence process.

7. State the objectives of IASB.

8. Explain in brief the structure of IASB.

9. What is IASB Board? What are the compositions of IASB Board?

10. Define OECD.   State the objectives of OECD in framing accounting standards.

11. What are the other regional organizations that took part in the convergence process?

12. Define global convergence of accounting standards. State the significance of global accounting standards.

13. What are the advantages and disadvantages of Global Convergence of Accounting Standards?

14. State the status of Global Convergence of Accounting Standards.

Unit - 3 ❑ Foreign Currency Transactions and Translation (IAS 21)

Structure

3.8   Key Words

3.9   Exercises

3.0 Objectives

The objectives of studying this unit are

- ● To understand the concept of foreign currency transactions and its recording

- ● To conceptualize the meaning of foreign currency translation

- ● To know the procedures of translation of foreign currency

- ● To discuss the treatment of foreign currency translation gains and losses

3.1 Introduction

International business relates to different nations participating in foreign trade in the course of imports, exports, foreign lending and borrowing etc. and inherently these foreign trades are incurred in different foreign currencies of the participating nations. Each nation uses its own foreign currency for settlement of trade and records these trade transactions in their own currencies. This makes a trouble to each other of the participating nations and to other users to understand and interpret the impact of accounting information prepared and presented in foreign currency. Over and above this, there are frequent changes in the value of one currency in relation another currency. This leads to undertake the attempts to convert foreign currency transactions in to home currency and this is popularly known as foreign currency translation. Foreign currency translation has become very much important for getting consolidated financial statement of a group of overseas companies in a single currency of the parent company. IAS 21 has given the prescribed guidelines for the foreign currency translations and for ascertaining the gains or losses due to foreign currency translation.

3.2 Foreign Currency Transaction-meaning

The term foreign currency transaction refers to transactions entered into in foreign currency when two or more countries take part in international trade in between them. A foreign currency transaction is one that requires settlement, either

payment or receipt, in a foreign currency. It is the distinguishing feature of foreign currency transaction that its settlement is effected in a foreign currency. Each country uses its own currency for trade settlement as per the existing exchange rates of traded foreign currencies. Enterprises around the globe come in contact to deal in foreign trade in the form of export, import of goods and services including transfer of technology and know-how, money transfers etc. by means of foreign currencies and record the transactions of trade in their own currencies.

3.2.1 Foreign Currency Transactions and AS 21

AS 21 defines foreign currency transactions as 'transactions whose terms are denominated in foreign currency which requires settlement in a foreign currency'. Foreign currency transaction arises when an enterprise-

  (i) buys or sells on credit goods/services whose prices are denominated in foreign currency;

 (ii) borrows or lends fund and the amount payable or receivable are denominated in foreign currency;

(iii) is a party to an unperformed foreign exchange contract;

(iv) acquires or disposes assets and incurs or settles liabilities denominated in foreign currency.

3.2.2 Recording of Foreign Currency Transactions

In case of foreign currency transactions, a considerable effort is required for recording of such transactions since the exchange rates of foreign currency keep on changing frequently. When the exchange rate changes between the original purchase or sale transaction date and the settlement date, there arises a gain or loss on the exchange. A foreign currency transaction may be denominated in one currency but measured or recorded in another. In foreign currency transaction, the

> A foreign currency transaction is a transaction of sales or purchases demoninated in a currency other than the company's functional currency operating in the particular country.

functional currency of an enterprise is to be conceptualized where functional currency is the currency of primary economic environment in which the enterprise operates. As for example, it is assumed that a US subsidiary operating in Thailand

made local purchases payable in Thai Baht while the functional currency of the US subsidiary is U.S. Dollar. In such a situation, the US subsidiary would measure the foreign currency transaction in U.S. Dollar though denominated in Thai Baht because the subsidiary would keep its books of account in its functional currency i.e. U.S. Dollar. In recording of foreign currency transaction, date of transaction is of vital issue.

Three dates are primarily related to recording of foreign currency transaction:

(a) Initial Transaction Date : It refers to the date on which the foreign currency transaction is initially occurred between the participating nations;

(b) Interim Reporting Date : It is the date of making interim report about financial and operating results after the foreign currency transaction is occurred; and

(c) Settlement Date : Settlement date is the date on which payment/receipt relating to foreign currency transaction is settled in between the participating nations engaged in foreign trade.

Organizations making foreign currency transactions have to record the transactions in a systematic manner as follows :

(a) Record the value of the transaction in home currency at the current exchange rate at the initial transaction date i.e. at the time of purchase or sale.

(b) Calculate the value of the payment in home currency at the current exchange rate at the settlement date when the transaction is to be settled.

(c) Post the receipt of the accounts receivable or payment of the accounts payable at the original rate at the time of settlement and record the loss on exchange by accounting for the difference between the original transaction value and the settlement amount.

(d) Calculate the value of foreign-currency accounts receivable or payable at the spot rate at the end of the accounting year.

(e) Record any change in value from the original transaction date as a foreign-currency gain or loss in the year and post the other side of the entry to accounts payable or accounts receivable, as considered necessary.

However, the organizations engaged in overseas trade may buy forward currency contract to get a guaranteed rate to avoid loss in foreign currency.

As per AS 21, the foreign currency transaction should be recorded initially at the rate of exchange at the date of the transaction. Thereafter at each subsequent balance sheet date, foreign currency monetary amounts should be reported using the closing rate and non-monetary items carried at historical cost should be reported using the exchange rate at the date of the transaction while non-monetary items carried at fair value should be reported at the rate that existed when the fair values were determined. Any exchange difference arising when monetary items are settled should be accounted for and reported.

There are two approaches of recording foreign currency transaction- a) Single-transaction approach and b) Two-transaction approach. Under the single-transaction approach, it is considered that a transaction and its subsequent settlement are a single event. But under the two-transaction approach, it is considered that foreign currency transaction relating to sale or purchase is separate from the consequent settlement in the form of amount payable or receivable.

3.3 Foreign Currency Translation-Concept and Meaning

The term 'translation' in the context of foreign currency, refers to the change in the monetary expression of financial date or in other words to convert financial data from one currency to another currency. Here, conversion from one currency to another does not mean conversion in physical terms; only the restatement of financial information prepared in one currency to some other currency as desired. Translation of foreign currency is very much significant consequent on the present era of ever-increasing cross-border trade where preparation of consolidated financial statement of a group of overseas companies is a bare necessity for the parent company operating in a different country.

Foreign currency translation is an attempt to restate or convert a set of financial data prepared in a particular currency into a separate currency as per the needs to meet the finance reporting related requirements to ensure understandability, comparability, effective analysis and interpretation. Transactions are normally measured and recorded in terms of the currency in which the reporting entity prepares its financial statements. This currency is usually the domestic currency of the country

in which the company is domiciled and is called the reporting currency. Thus, translation is the process of expressing monetary amounts that are stated in terms of a foreign currency in the currency of the reporting entity by using an appropriate exchange rate. An exchange rate "is the ratio between a unit of one currency and the amount of another currency for which that unit can be exchanged at a particular time."

> Foreign currency transaction is a process of the financial statement in the currency in which the company presents its financial statements. Showing its assets liabilities, revenue, expenses etc. that are denominated in foreign currencies. Currency translation allens a company with foreign operations or subsidiaries to reconcile all of its financial statements in terms of local currency.

Subsidiary companies prepare their accounting and reporting information as per the currency in operation of the countries where they operate and these financial statements of subsidiaries prepared under different foreign currencies are used by the parent company to prepare group financial statement for consolidation purpose. But the parent company faces trouble to consolidate since the financial data are based on various foreign currencies. It thus requires to translate i.e. convert the financial data of various subsidiaries denominated in different foreign currencies into a single currency of the reporting company (parent company) to make the consolidated financial statement really understandable and effective to interpret the group financial performance. Thus, the MNCs (Multi-national Corporations) translate the financial figures of subsidiaries into a single currency of the reporting MNCs for preparing consolidated financial statement in a meaningful and purpose-oriented manner.

3.3.1 Need for Foreign Currency Translation

Foreign currency translation is primarily concerned with the preparation and presentation of consolidated financial statements of group of overseas companies in a single currency of the parent company by translating and restating the financial information. In the translation process, the financial data contained in the balance sheet and income statement of a foreign subsidiary are expressed or in other words restated in the currency denomination of the reporting entity. However, it is to be noted that by any means translation from one currency to another is not conversion of currency in physical term. The emphasis here is on expressing the financial

information of a foreign subsidiary prepared in functional currency (i.e. the currency of the country where the subsidiary operates) into the currency of the reporting country in which the parent entity is established such that the parent company can prepare consolidated financial statement with the help of restated financial data for better understanding the group performance. The need of foreign currency translation is highly significant as may be highlighted below:

(a) Translation of foreign currency is required for consolidation of financial statements of overseas subsidiaries and the parent entity by expressing the financial information in a single currency called the reporting currency.

(b) Foreign currency translation is very much needed to analyse and interpret the financial positions of various subsidiaries of a multinational corporation.

(c) Translation of foreign currency by restating the financial information in a single currency is very much important in order to facilitate performance evaluation of subsidiaries operating across the globe.

(d) The overall result of foreign currency translation of various overseas subsidiaries along with the parent entity significantly assists the global investors to take appropriate economic decisions.

(e) Translation opens up the scope of higher global trade since the market players become interested to international trade for getting access to global trade information in a much more understandable and dependable manner.

3.3.2 Significance of Foreign Currency Translation

Foreign currency translation is the designated process of restating the financial statements of enterprises from the currency in which these are prepared to another currency for consolidation purpose. The significance of foreign currency translation may be highlighted as follows:

(a) Consolidation of Financial Statements- Overseas companies prepare their financial information in different currencies of the economic environments where they operate. These diverse financial statements based on different foreign currencies are not fit for preparing consolidated statements. Foreign currency translation significantly helps in restating these in a single currency to prepare globally consolidated financial statements.

(b) Analysis and Interpretation of Financial Results of Overseas Companies- Global investors may not be able to understand and interpret the financial results of foreign companies prepared in different foreign currencies. Foreign currency translation offers the opportunity to express or restate the financial information prepared in a particular currency into the currency desired by the investors to help them understand and interpret the true financial positions of overseas companies for decision making purposes.

(c) Comparison of Financial Statements of Subsidiaries- Foreign currency translation facilitates the comparison of financial statements of different subsidiaries by the parent entity although these subsidiaries prepare and present their financial information in their respective local currencies which may not be perceived by the parent entity for comparison purposes.

(d) Uniformity in Presentation of Financial Information- Foreign currency translation tends to offer uniformity in presenting financial information of various overseas firms in a single currency i.e. the currency of the reporting entity. This renders a magnificent opportunity to assess the group financial performance of a host of companies in a compact and meaningful manner.

3.4 Methods of Foreign Currency Translation

Overseas companies operating in different countries prepare and present their financial statements denominated in the currency of the country where they operate and function. The statements of the overseas subsidiaries do not afford benefits to the parent entity thereof to understand and realize the implications of the financial statements. To overcome the impasse, financial statements prepared in foreign currency are restated to the reporting currency of the parent company. This process of restating the financial information from one currency to another is known as foreign currency translation.

Companies come across the need to adopt foreign currency translation when they have foreign operations that use different currencies to prepare financial statements. Accounting standards insist on to adopt a consistent translation methodology so that the translated financial reports truly reflect the underlying economic circumstances. Accordingly, companies operating internationally are found to undertake translation process so as to restate their assets, liabilities, revenues and

expenses relating to the foreign subsidiaries in their domestic currency for which they apply different methods - (i) Single Rate Method and (ii) Multiple Rate Method.

3.4.1 Single Rate Method

The single rate method, long popular in UK and other parts of Europe, applies a single exchange rate, the current exchange rate or closing exchange rate, to restate all foreign currency assets and liabilities in the reporting currency. Under this method, foreign currency revenue and expenses are translated at the exchange rates prevailing at the time of recognizing such items. However, for the sake of convenience, under the single rate method, translation work is performed by adopting the average exchange rate over the period. Under this method, the focus is given on the concept that a foreign subsidiary is a separate unit to prepare and publish its financial report in its own reporting domicile where it operates and as such the use of one single rate for the entire translation process is considered appropriate. The use of current rate or closing rate for translation purpose under the single rate method has the following advantages :

(i) The computational work for translation purpose is less complex and less time consuming;

(ii) The original relationships among the different aspects of financial statement of a foreign subsidiary remain intact as all the foreign currency financial statement items are translated by a single rate;

(iii) By translating all foreign currency balances by current rate method, translation gains and losses are mostly offset due to the changes in exchange rates in reverse direction;

(iv) The translation process makes the consolidated financial statements more understandable as well as user-friendly.

3.4.2 Multiple Rate Methods

Under the multiple rate method, foreign currency translation is undertaken by any of the three methods- (a) Current-Noncurrent Method, (b) Monetary-Nonmonetary Method, and (c) Temporal Method. The three methods are described as follows :

3.4.2.1 Current-Noncurrent Method

Under the Current-Noncurrent Method for foreign currency translation, all assets and liabilities are categorized into two groups-current and non-current based

on some criteria. Current items representing current assets refer to those which complete its conversion process to reach to money or money equivalent within one operating cycle and current items representing current liabilities refer to those which are matured within one year. Non-current items are those which are not included in the current items category. All current assets and current liabilities of a foreign subsidiary are translated in their parent company's reporting currency at the current exchange rate prevailing on the balance sheet date. In case of non-current assets and liabilities, historical exchange rates prevailing on the dates of transaction are used for translation purposes. Income statement items other than depreciation and amortization charges are translated at the average rates applicable to each month of operation or on the basis of weighted average rate of the entire reporting period. Depreciation and amortization charges are translated at the historical rates entertained at the time of acquiring the relevant asset.

However, the current-noncurrent method makes little economic sense. Using the current exchange rate to translate current assets implies that foreign currency cash, receivable, and inventories are equally exposed to exchange risk. This is simply not true. Moreover, current and non-current definitions are merely a classification scheme, based on conversion time to complete or on estimation of maturity period, of which rates to use in translation process.

3.4.2.2 Monetary-Nonmonetary Method

Under the monetary-nonmonetary method, assets and liabilities are classified as monetary and non-monetary items. Monetary items are those for which a fixed contractual amount is receivable or payable in foreign currency. Non-monetary items are those for which no fixed contractual amount is specified. All monetary assets like cash, bills receivable and other highly liquid assets and all monetary liabilities (except owners' equity) are translated at current exchange rate. Non-monetary assets and liabilities like fixed assets, long-term investments, term loans and advances are translated at historical rates. Income statement items are translated in the similar way as followed under current-noncurrent framework.

However, as opposed to current-noncurrent method, monetary-nonmonetary method of translation views monetary assets and liabilities as exposed to exchange rate risk. As long as monetary items are settled in cash, translation of monetary items at current rate produces domestic currency equivalents to reflect true settlement values thereof.

3.4.2.3 Temporal Method

Under the temporal method, all monetary items like cash, receivables, and payables are translated either at current exchange rate. Non-monetary items are translated at rates that preserve their original measurement bases. In fact, the temporal method of translation is similar to the monetary-nonmonetary method except for its treatment of non-monetary assets carried at current prices. When nonmonetary items abroad are valued at historical rate, the translation procedures resulting from the temporal method become virtually identical to those produced by the monetary-nonmonetary method. Revenues and expense items are translated at the rates that prevailed when the underlying transactions took place. However, in case of voluminous transactions average exchange rate is suggested to take into account for translation purpose.

Illustration-3.1

The following is the balance sheet of Fair Play & Co. of USA, an Indian subsidiary as at March 31, 2018 :

Liabilities & Capital	Amount (USD)
I. Share Capital :	45,000
(a) Owner's Equity	
II. Non-Current Liabilities :	30,000
Long Term Debt	
III. Current Liabilities :	15,000
Sundry Creditors	
	90,000
Assets	
I. Non-Current Assets :	20,000
(a) Land & Building	27,000
(b) Plant & Machinery	
II. Current Assets :	18,000
(a) Inventories	20,000
(b) Sundry Debtors	5,000
(c) Cash & Bank	
	90,000

You are required to translate the above Balance Sheet of Fair Play & Co. into Indian Rupee under (i) Current Rate Method, (ii) Current-Noncurrent Method, (iii) Monetary-Nonmonetary Method and (iv) Temporal Method, assuming that the historical rate and current rate are- 1 US Dollar (USD) = 22 Indian Rupees (INR) and 1 USD = 25 INR respectively.

Solution :

Foreign Currency Translated Balance Sheet of Fair Play & Co. as on 31st March, 2018

	Amount (USD)	Current Rate Method Amount (INR)	Current-Noncurrent Method Amount (INR)	Monetary-Nonmonetary Method Amount (INR)	Temporal Method Amount (INR)
Liabilities & Capital					
I. Share Capital :					
(a) Owner's Equity	45,000	11,25,000	10,74,000	9,30,000	9,84,000
II. Non-Current Liabilities :			(Bal. Fig.)	(Bal. Fig.)	(Bal. Fig.)
(a) Long Term Debt	30,000	7,50,000	6,60,000	7,50,000	7,50,000
III. Current Liabilities :					
(a) Sundry Creditors	15,000	3,75,000	3,75,000	3,75,000	3,75,000
	90,000	**22,50,000**	**21,09,000**	**20,55,000**	**21,09,000**
Assets					
I. Non-Current Assets :					
(a) Land & Building	20,000	5,00,000	4,40,000	4,40,000	4,40,000
(b) Plant & Machinery	27,000	6,75,000	5,94,000	5,94,000	5,94,000
II. Current Assets :					
(a) Inventories	18,000	4,50,000	4,50,000	3,96,000	4,50,000
(b) Sundry Debtors	20,000	5,00,000	5,00,000	5,00,000	5,00,000
(c) Cash & Bank	5,000	1,25,000	1,25,000	1,25,000	1,25,000
	90,000	**22,50,000**	**21,09,000**	**20,55,000**	**21,09,000**

Notes :

(i) Land & Building and Plant & Machinery have been translated at the assumed current rate (1USD = 25 INR) under Current Rate Method but they have been translated at the assumed historical rate (1 USD = 22 INR) under the Current-Noncurrent Method, Monetary-Nonmonetary Method and Temporal Method.

(ii) Sundry Debtors and Cash & Bank being Current Assets have been translated at the assumed current rate (1 USD = 25 INR) under all the four methods.

(iii) Inventories have been translated under Current Method, Current-Noncurrent Method and Temporal Method at the assumed current rate (1 USD = 25 INR) but translated under the Monetary-Nonmonetary Method at the assumed historical rate (1 USD = 22 INR).

(iv) Sundry Creditors being Current Liabilities have been translated at the assumed current rate (1 USD = 25 INR) under all the four methods.

(v) Long Term Debt being non-current liabilities has been translated at the assumed current rate (1 USD = 25 INR) under Current Method, Monetary-Nonmonetary Method and Temporal Method but has been translated under Current-Noncurrent Method at the assumed historical rate (1USD=22 INR).

(vi) Owner's Equity has been translated under the Current Method at the assumed current rate (1 USD = 25 INR) but under Current-Noncurrent Method, Monetary-Nonmonetary Method and Temporal Method, Owner's Equity has been computed at the balancing figure taking total of translated values of Assets minus translated values of Long Term Debt and Sundry Creditors under the respective methods.

Illustration-3.2

The following is the Balance Sheet of Zenith India Ltd. of Canada, an Indian subsidiary as on 31st March, 2018 :

Liabilities & Capital	Amount (CD)
I. Share Capital :	
(a) Owner's Equity	
(i) Equity Share Capital	1,30,000
(ii) 12% Pref. Share Capital	50,000
II. Non-Current Liabilities :	
8% Debentures	20,000
III. Current Liabilities:	
(a) Sundry Creditors	70,000
(b) Bank Overdraft	10,000
	2,80,000

Assets	Amount (CD)
I. Non-Current Assets :	
(a) Land & Building	1,20,000
(b) Plant & Machinery	40,000
(c) Other non-current assets	
Investments in Stocks	20,000
II. Current Assets :	
(a) Inventories	50,000
(b) Sundry Debtors	30,000
(c) Cash & Bank	20,000
	2,80,000

You are asked to prepare foreign currency translated balance sheet under single rate and multiple rate approaches and to ascertain the foreign currency gain or loss, if any, under the different approaches assuming that the historical rate and current rate are- 1 Canadian Dollar (CD) = 32 Indian Rupees (INR) and 1 CD = 40 INR respectively.

Solution :

Foreign Currency Translated Balance Sheet of Fair Play & Co. as on 31st March, 2018

	Amount (USD)	Current Rate Method Amount (INR)	Current-Noncurrent Method Amount (INR)	Monetary-Nonmonetary Method Amount (INR)	Temporal Method Amount (INR)
Liabilities & Capital					
I. Share Capital :					
(a) Owner's Equity					
i) Equity Share Capital	1,30,000	52,00,000	42,20,000	32,60,000	34,20,000
ii) 12% Pref. Share Capital	50,000	20,00,000	16,00,000	20,00,000	20,00,000
II. Non-Current Liabilities :					
8% Debentures	20,000	8,00,000	6,40,000	8,00,000	8,00,000
III. Current Liabilities :					
(a) Sundry Creditors	70,000	28,00,000	28,00,000	28,00,000	28,00,000
(b) Bank Overdraft	10,000	4,00,000	4,00,000	4,00,000	4,00,000
	2,80,000	**112,00,000**	**96,60,000**	**92,60,000**	**94,20,000**

	Amount (USD)	Current Rate Method Amount (INR)	Current-Noncurrent Method Amount (INR)	Monetary-Nonmonetary Method Amount (INR)	Temporal Method Amount (INR)
Assets					
I. Non-Current Assets :					
(a) Land & Building	1,20,000	48,00,000	38,40,000	38,40,000	38,40,000
(b) Plant & Machinery	40,000	16,00,000	11,80,000	11,80,000	11,80,000
(c) Other non-current assets					
Investments in Stocks	20,000	8,00,000	6,40,000	6,40,000	8,00,000
II. Current Assets :					
(a) Inventories (at cost)	50,000	20,00,000	20,00,000	16,00,000	16,00,000
(b) Sundry Debtors	30,000	12,00,000	12,00,000	12,00,000	12,00,000
(c) Cash & Bank	20,000	8,00,000	8,00,000	8,00,000	8,00,000
	2,80,000	**112,00,000**	**96,60,000**	**92,60,000**	**94,20,000**
Foreign Currency Translation Gain (+)/Loss (-)	Nil	Nil	(42,20,000 – 41,60,000)= (+) 60,000	(32,60,000 – 41,60,000)= (–)9,00,000)	(34,20,000- 41,60,000= (–)7,40,000

3.5 Treatment of Translation Gains and Losses

The foreign currency translation process used to restate the financial information of foreign subsidiaries to keep pace with the reporting currency of a parent entity very often gives rise to some translation gains or losses. These translation gains or losses arise for applying current exchange rate/terminal exchange rate/historical exchange rate for restating the financial information of overseas subsidiaries at par with the reporting currency. The translation gains or losses are treated by three methods- (i) Immediate recognition and reflection in the income statement, (ii) Deferral method, and (iii) Deferral and amortization method.

3.5.1 Immediate Recognition and Reflection Method

This method is based on the traditional approach of conservatism and is also popularly known as non-deferral method. Under this method translation gains or losses are recognized as soon as they occur and are disclosed instantly in the same

periodic income statement of the reporting entity in which such gains or losses arise. The immediate recognition method is considered efficient since it reflects and communicates the impact of translation process immediately after its occurrence without any delay to the users of financial information. The opponents of this method argue that the method of immediate recognition and reflection of translation gains and losses in the present income statement may cause significant fluctuation to the earnings of the reporting entity and it may disrupt the true interpretation of financial statements.

3.5.2 Deferral Method

Unlike the immediate recognition method, the deferral method treats the foreign currency translation gains and losses by allowing to accumulate these separately as 'consolidated equity' and they are not transferred to the income statement. The ideology behind this practice of accumulation is that the translation gains and losses are never realized until the foreign operations are closed down and all the assets and liabilities belonging to foreign operations are returned back to the parent entity. This method is also considered reasonable based on the philosophy that changes in the subsidiary's net assets due to currency fluctuations are unrealized and further that such changes do not affect the subsidiary's cash flows and as such, it is improper to adjust the translation gains and losses in the reporting firms' current income. However, this practice of accumulating the exchange rate losses without recognizing these in the income statement of the relevant year of the parent entity becomes a mismatch and violates the basic accounting principle of conservatism and full disclosure.

3.5.3 Deferral and Amortization Method

This method follows the practice of treating the translation gains and losses by amortizing these over the life of the concerned balance sheet items. The argument for doing so is that the cost of an asset includes the sacrifice required to discharge the related liabilities. The translation loss is thus treated as part of the related asset cost and amortized to expenses over its useful life. As the fixed assets are usually translated at historical rates of exchange, the amount of depreciation charged to income statement becomes lower than would have charged at current rates; thus by following this treatment of translation gains and losses, the inflated income so derived would be offset by the reduced income due to amortization of deferred

translation losses. However, this method is not free from criticism since it disregards the dual aspect concept of accounting.

3.6 Foreign Currency Translation and IAS 21

The objective of IAS 21 is to prescribe how to include foreign currency transactions and foreign operations in the financial statements of an entity and how to translate financial statements into a presentation currency. The principal issues are which exchange rate/s to use and how to report the effects of changes in exchange rates in the financial statements. For this purpose, IAS 21 has given some key definitions:

Functional Currency—The currency of the primary economic environment in which the entity operates.

Presentation Currency—The currency in which financial statements are presented.

Exchange Difference—The difference resulting from translating a given number of units of one currency into another currency at different exchange rates.

Foreign Operation—A subsidiary, associate, joint venture, or branch whose activities are based in a country or currency other than that of the reporting entity.

IAS 21 in relation to translation of financial statements prescribes that the methods to be adopted for translation purpose would depend on the nature of the foreign operation - i) integral to the operations of the reporting entity or ii) non-integral to the operations of the reporting entity.

The foreign operation will be considered as non-integral to the operations of the reporting entity in the flowing cases :

(a) The foreign operations are carried out with significant autonomy;

(b) The foreign entity's transactions with the reporting entity are not of very high proportion;

(c) The foreign entity's activities are financed principally from its own sources or by means of local borrowings instead of the reporting entity's fund;

(d) The foreign entity's cost of labour, material and other components are paid primarily in local currency and not in the currency of the reporting entity;

(e) The sales are primarily made in any currency other than reporting the entity's currency, where reporting currency is the currency in which an entity denominates its financial statement;

(f) The day-to-day activities of the foreign operation do not directly affect the cash flows of the reporting entity.

Any exchange difference arising when monetary items are translated at rates different from those at which they were translated when initially recognized or in previous financial statements are reported in profit or loss in the period, with one exception. The exception is that

3.6.1 Translation for Integral Operations

Foreign operations that are integral to the operations of the reporting entity are taken as if they are the transactions of reporting entity itself. Accordingly, these operations should be translated in line with the provisions of IAS 21. The prescribed procedures for translation of foreign operations as per IAS 21 are as follows:

(a) Foreign currency monetary items representing cash and claims of fixed monetary obligations should be reported at the closing exchange rate being the spot rate for the immediate delivery of currencies exchanged on the balance sheet date.

(b) Foreign currency non-monetary items representing all items of the balance sheet other than cash and cash equivalents should be reported at the rate prevailing on the date of transaction where these items are carried at historical cost. But if these are carried at fair values (such as revalued property, plant and machineries as per alternative requirements) should be reported at exchange rate that existed at the time of fair value determination.

(c) Items of revenue and expenses should be reported at the rate prevailing on the date of transaction. However for simplicity and also as per usual practice, a monthly average rate concerning all items of revenue and expenses over the entire period except depreciation should be utilized for translation purposes. For depreciation charges, the translation rate should be the rate prevailing on the date of purchase of the relevant assets.

(d) Exchange difference arising when monetary items are translated at rates different from those at which they were translated when initially recognized or in previous financial statements are to be reported in profit and loss statement of the period.

Exchange differences arising on monetary items that form part of the reporting entity's net investment in a foreign operation are to be recognized in profit and loss statement only on disposal of the net investment; otherwise they should be classified as a separate component of equity.

Also any exchange differences arising on foreign liability has to be accounted for as a hedge of the reporting entity's net investment in a foreign entity.

(e) Inventories are to be reported at the rate prevailing on the date of purchase. If the inventories are carried at a lower realizable value for price deflation or otherwise, these should be reported at the rate prevailing at the time of determining lower realizable value.

3.6.2 Translation for Non-integral Operations

IAS 21 has prescribed for translation of financial statements of foreign operations that are non-integral to the reporting entity's operations as follows :

(a) All balance sheet items representing assets and liabilities should be translated at the closing exchange rate, whether monetary or non-monetary nature.

(b) Items of revenue and expenses items should be translated at the rate prevailing on the date of transaction. However, special rules apply for translating the revenue and expenses items of a foreign entity whose functional currency is the currency of a hyperinflationary economy in which case translation has to be made at the closing rate.

(c) Exchange difference should be classified as a separate component of equity until the disposal of reporting entity's net investment in the foreign entity.

(d) When a foreign operation is disposed of, the cumulative amount of the exchange differences recognized and accumulated in the separate component of equity relating to that foreign operation should be recognized in profit and loss statement of the reporting entity.

3.7 Summary

Foreign currency translation refers to the change in the monetary expression of financial information disclosed in the financial statement of an enterprise. Translation of foreign currency is basically the restatement of financial information of a foreign subsidiary denominated in the functional currency (i.e. currency of the country in which the foreign subsidiary operates) into the reporting currency of the parent company to ensure understandability, comparability, effective analysis and interpretation. Thus, translation is the process of expressing monetary amounts that are stated in terms of a foreign currency in the currency of the reporting entity by using an appropriate exchange rate.

A foreign currency transaction is one that requires settlement, either payment or receipt, in a foreign currency. It is the distinguishing feature of foreign currency transaction that its settlement is effected in a foreign currency. Each country uses its own currency for trade settlement as per the existing exchange rates of traded foreign currencies. In recording of foreign currency transaction, date of transaction is of vital issue and there three to be considered for recording purpose- initial transaction date, interim transaction date and settlement date.

The foreign currency translation is very much needed for consolidation of financial statements of overseas subsidiaries and the parent entity by expressing the financial information in a single currency called the reporting currency for analyzing and interpreting the financial positions of various subsidiaries of a multinational corporation. Performance evaluation of subsidiaries operating across the globe cannot be made possible without the translation process which significantly assists the global investors to take appropriate economic decisions. The foreign currency translation has broader scope to zoom up foreign trade since the foreign market players become interested in cross-border trade for getting access to global trade information to adopt a consistent translation methodology so that the translated financial reports in a much more understandable and dependable manner.

Accounting standards insist on truly reflect the underlying economic circumstances. Accordingly, companies operating internationally are found to undertake translation process so as to restate their assets, liabilities, revenues and expenses relating to the foreign subsidiaries in their domestic currency for which they apply

different methods - (i) Single Rate Method and (ii) Multiple Rate Method. Under the multiple rate method, foreign currency translation is undertaken by any of the three methods- (a) Current-Noncurrent Method, (b) Monetary-Nonmonetary Method, and (c) Temporal Method.

The foreign currency translation process used to restate the financial information of foreign subsidiaries to keep pace with the reporting currency of a parent entity very often gives rise to some translation gains or losses. These translation gains or losses arise for applying current exchange rate/terminal exchange rate/historical exchange rate for restating the financial information of overseas subsidiaries at par with the reporting currency. The translation gains or losses are treated by three methods- i) Immediate recognition and reflection in the income statement, ii) Deferral method, and iii) Deferral and amortization method.

IAS 21 has prescribed how to include foreign currency transactions and foreign operations in the financial statements of an entity and how to translate financial statements into a presentation currency. The principal issues are which exchange rate/s to use and how to report the effects of changes in exchange rates in the financial statements. For this purpose, IAS 21 has given some key definitions about functional currency, presentation currency, exchange difference and foreign operation as guidelines to follow. IAS 21 in relation to translation of financial statements prescribes that the methods to be adopted for translation purpose would depend on the nature of the foreign operation - (i) integral to the operations of the reporting entity or (ii) non-integral to the operations of the reporting entity.

3.8 Key Words

Consolidation of Financial Statements : Consolidation of financial statement is the process of merging the diverse financial statements of several overseas units operating under a parent company.

Foreign Currency Transaction : It refers to transactions entered into in foreign currencies of different countries engaged in international trade. A foreign currency transaction is one that requires settlement, either payment or receipt, in a foreign currency.

Monetary Assets and Liabilities : Assets and liabilities whose amounts are

fixed by contract in terms of currency of the foreign entity are known as monetary and assets and liabilities.

Non-current Assets and Liabilities : Assets and liabilities which do not mature within one year within one operating cycle are known as non-current assets and non-current liabilities

Non-Monetary Assets and Liabilities : Assets and liabilities whose amounts are not fixed by contract in terms of currency of the foreign entity are known as monetary and assets and liabilities.

Settlement Date : Settlement date is the date on which payment/receipt relating to foreign currency transaction is settled in between the participating nations engaged in foreign trade.

Single Rate : The single rate refers to the rate applies a single exchange rate, either the current exchange rate or closing exchange rate, to restate all foreign currency assets and liabilities in the reporting currency. Foreign currency translation significantly helps in restating these in a single rate to prepare globally consolidated financial statements.

3.9 Exercises

1. What is meant by foreign currency transaction as per AS 21?

2. When does foreign currency transaction arise ?

3. What are the needs of foreign currency transactions ?

4. State the significance of recording foreign currency transactions.

5. What are the different dates associated with the recording of foreign currency transactions ?

6. What do you mean by foreign currency translation? What are its objectives ?

7. What are the different methods of foreign currency translation ? Explain those.

8. What is the single rate of translation ? State the advantages of using the single rate for translation purpose ?

9. What do you mean by multiple rate for translation of foreign currency ? What is the current-noncurrent method of translation ?

10. Distinguish between current-noncurrent method and monetary-nonmonetary method of translation.

11. What is meant by temporal method of translating foreign currency?

12. How are the translation gains/losses treated? What are the different methods for treating translation gains/losses?

13. State the immediate recognition and reflection method for treatment of translation gains/losses.

14. Distinguish in brief between the deferral method and deferral and amortization method for treatment of translation gains/losses.

15. What do you mean by non-integral foreign operation?

16. State the translation process for integral foreign operation.

17. State the translation process for non-integral foreign operation.

18. Balance sheet of Zigma Ltd. of USA, an Indian subsidiary as on 31st March 2018 :

Liabilities	USD	Assets	USD
Equity Share Capital	1,20,000	Land & Building	1,00,000
Reserves and Surplus	50,000	Plant & Machinery	1,10,000
Long term Debt	80,000	Inventories (at market price)	60,000
Accounts Payables	30,000	Accounts Receivables	20,000
Other Current Liabilities	20,000	Cash & Bank	10,000
	3,00,000		**3,00,000**

Translate the above balance sheet into Indian rupees (INR) using different rates of translations assuming the historical rate and current rate of 1US Dollar (USD) are 62 INR and 70 INR respectively.

Unit - 4 ❑ International Transfer Pricing

Structure

4.0 Objectives

4.1 Introduction

4.2 Transfer Pricing and International Transfer Pricing- meaning

    4.2.1 Objectives of International Transfer Pricing

    4.2.2 Significance of International Transfer Pricing

4.3 Technique of Transfer Pricing and its impact on International Tax Burden

4.4 Controlling International Transfer Pricing

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4.5 Advance Pricing Agreement

4.6 Safe Harbour

4.7 Summary

4.8 Key Words

4.9 Exercises

4.0 Objectives

After studying this unit you can know the

- Concept and meaning of Transfer Pricing

- Significance of adopting transfer pricing

- Different methods of transfer pricing

- Meaning and importance of Advance Pricing Agreement

- Concept of Safe Harbour

4.1 Introduction

The primary objectives of international trade through traditional foreign trade or through the modern era of foreign trade with the aid of MNCs, e-commerce etc. is to maximize foreign exchange earnings from foreign markets for the growth of home economy. This concept has motivated the global market players to enter into foreign trade on a large scale in the seemingly borderless foreign economy especially in the epoch of globalization, liberalization and privatization. But due to wide diversity in international taxation policy, MNCs find it really difficult to operate globally through foreign affiliates to attain the objective of maximizing foreign earnings because of the increasing international tax liability and also the frequent changes in tax legislations. In fact, a substantial part of foreign exchange income earned has to be spent by the MNCs to bear the international tax burden. To overcome this deadlock, MNCs have been taking the transfer pricing mechanism as a step to combat with the international tax burden by way of shifting cost from low-tax jurisdiction to high-tax country to attract less tax burden. This shifting of cost from low-tax country to high-tax country arbitrarily helps to reduce taxable profits in high tax country so as to bear less tax burden than would have been payable without availing transfer pricing technique. Transfer pricing mechanism significantly helps MNCs and other foreign traders to pay less tax to the host country (source country) where foreign income is generated and to bring more of after-tax foreign income to home country (country of origin) by manipulating cost adjustment in intra-country transfer of goods and services. This practice has a negative impact in the economy of the source countries since they have to lose their fair share of national income in the form of tax revenue collection which could have earned from MNCs and others who carry on trade in such countries but for the transfer pricing mechanism adopted by them. To tackle the situation, international tax authorities have promulgated the arms' length principle, advance pricing agreement as a safeguard from the loss of tax revenue from the foreign traders operating in the host country.

4.2 Transfer Pricing and International Transfer Pricing-meaning

Pricing of goods and services transferred from operations or manufacturing units located in one geographical area to other operations or units located at some other

places is called transfer pricing. Transfer pricing is a common practice followed MNCs for transferring goods and services among the subsidiaries which trade among themselves or with the parent firm. A transfer price is the price which one segment (sub unit, department, division etc.) of an organization charges for a product or service supplied to another segment of the same organization. This transfer from one segment to another is only an internal transfer of goods and services and not a sale.

Transfer pricing is a concept traditionally undertaken for the amount to be charged by one segment of an enterprise for a product or service that is supplied to another segment of the same enterprise with the intention to minimize the tax liability. With the evolution of MNC concept, segments of the enterprise started spreading as independent entities operating in various parts of the globe. Accordingly, the term has evolved to mean price which is charged between two or more entities of a MNC/associated enterprises operating in different countries.

In common parlance, transfer price is the price at which divisions of a company transact with each other, such as the trade of supplies or labour between divisions or departments. Enterprises under the common ownership and control, transfer goods and services among them at some intra-company prices arrived at as per direction of the owner entity and this price is termed as transfer price which may the original cost price of goods and services (for example, cost of manufacture) or may be the intra-company cost (for example, cost plus profit) or any other price as may be determined. Transfer pricing refers to value attached to transfer of goods or services between related parties. Thus, transfer pricing can be defined as the price paid for goods transferred from one economic entity to another, while they are operating under a common ownership in and around the globe, may be within a country or in cross-border.

Transfer pricing refers to the process for pricing transaction between enterprises under common ownership and control and is more commonly used in international tax perspectives. In the context of international taxation, the term transfer pricing means the setting or fixing the prices of goods and services transferred by one company to another being interrelated companies in a manner that the ultimate tax burden of the companies as a whole is reduced. Under transfer pricing, the shifting of revenues and expenses (cost) is deliberately entertained through inter-company ties (MNCs operating foreign business with the help of foreign affiliates) gives

opportunity to the MNCs to minimize global tax burden. This deliberate shifting of revenue and cost adopted by MNCs to reduce global tax liability is popularly known as transfer pricing activity.

Multinational companies (MNCs) enjoy some distinct advantages over the purely domestic companies since the MNCs have more geographical flexibility in locating their production and distribution systems. This geographical flexibility in operating in global sphere provides them unique opportunity to exploit differences among national tax jurisdictions so as to manage and even curtail their overall international tax burden by adopting transfer pricing mechanism.

4.2.1 Objectives of International Transfer Pricing

International transfer pricing refers to the value attached to transfer of goods, services, and technology between MNCs and their foreign affiliates working at different geographical locations. While transferring goods and services, MNCs adopt transfer pricing methodology as a part of their international trade strategy to attain the following objectives:

(a) To ensure free flow of goods/services in cross-border trade- International transfer pricing is aimed at monitoring the flow of goods and services among the divisions of a company operating across the globe. Setting or fixing transfer pricing for intra-divisional transfers is a crucial issue to continue foreign trade in highly competitive geographical locations.

(b) To facilitate divisional performance measurement- Another important objective of transfer pricing is to measure the notional transfers/sales of one division to another division of MNCs. Thus, the value of transfer prices used in a division or unit will have a significant effect on the performance evaluation of the division/unit. In fact, transfer pricing becomes necessary when there are internal transfers of goods/services and it is required to appraise the performances of the divisions/units involved in foreign trade under MNCs.

(c) To emphasize on maximizing foreign exchange earnings- MNCs operating globally with the of foreign affiliates focus on profit maximization in the form of foreign exchange earnings. Transfer pricing helps the process of

determining the price at which goods are transferred from one profit center to another profit center within the same company to maximize profit.

(d) To manipulate changes in firms' profitability- Under international transfer pricing, if prices are set too high, the selling global affiliates will be able to earn more and the buying affiliates will face hardship in the global market. However, if international transfer prices are set too low the buying affiliates will receive an unwarranted proportion of the profits. Thus, shifting of profits significantly manipulate profitability of affiliates.

(e) To minimize global tax burden- The objective of setting international transfer pricing is to adopt cost allocation or shifting of cost form low tax jurisdiction to high tax jurisdiction to reduce international tax burden. The effect of shifting cost is that the profit attributable to one jurisdiction is shifted to another jurisdiction. The main object behind this cost allocation is to minimize international tax liability by reducing profits artificially in high tax jurisdiction so that tax obligation is reduced in a specific tax jurisdiction.

4.2.2 Significance of International Transfer Pricing

The need for transfer pricing arises when intra-firm exchange of goods and services is occurred. In case of international trade, where global corporate enterprises operate foreign trade with the help of their designated affiliates or subsidiaries spread over different geographical locations. The parent entity and the subsidiaries very often make inter-changes of goods, services, technologies etc. at some predefined prices called transfer prices. The fixing of transfer pricing is very much significant to achieve overall success in cross-border trade where companies under common ownership and control run and operate foreign trade in various tax jurisdiction with an emphasis to maximize foreign exchange earnings and to minimize global tax liability. As such, transfer pricing has attracted increasing worldwide significance as may be highlighted below:

❖ Transfer pricing is more a global phenomenon than domestic matter since a group of companies under common ownership and control remain busy in different geographical locations to exploit foreign market for profit maximization.

❖ The global firms i.e. the MNCs and their foreign affiliates are affected by more variables than are usually found in domestic operations. Foreign trade restrictions, frequent changes in foreign currencies, global trade pacts etc. heavily affect the business operations carried on by them across the globe.

❖ International transfer pricing strategies adopted significantly varies from industry to industry, country to country to meet the needs of people living in different geographical locations.

❖ International transfer pricing affects the social, economic, and political issues and relationships involving people and the MNCs operating in a particular country. Depending upon the status of local people, their habits, cultural heritage, standards of living etc., the fixing of transfer pricing policy should be adopted.

❖ International transfer pricing is significantly influenced by the prevailing international tax system since MNCs are highly interested to minimize global tax burden to optimize foreign exchange earnings.

❖ International transfer pricing technique of internal cost allocation among group companies operating globally is very much helpful to shift profits from high tax to low tax countries.

4.3 Technique of Transfer Pricing and its impact on International Tax Burden

Business and investment opportunities are becoming increasingly international in the wake of sweeping wave of globalization. However, the tax systems of different countries vary greatly in terms of types and modalities of taxes including diversity in definitions and implications of income and expenses, exemptions, tax concessions, rates and collection procedures etc. This wide diversity in global tax system often prohibits the multinational companies to concentrate on cross-border trade. The overall global trade is hampered due to diverse global tax system and the MNCs try to restrict their foreign trade in those tax jurisdictions where tax burden is low and moderate and international tax administration is not so stringent. To achieve this

target to reduce tax burden, firms operating globally under different tax jurisdictions incorporate transfer pricing mechanism as a vehicle.

Internal allocation of cost between groups of globally operated firms is a suitable vehicle for shifting profits from high tax country to low tax country to minimize overall tax burden. The most common of such cost allocations are deliberate allocation of corporate overheads and administrative expenses at a greater degree to foreign affiliates operating in a high tax jurisdiction. This phenomenal mechanism of shifting cost from low tax to high tax country or shifting of profit or revenue from high tax to low tax country has the remarkable impact on to fabricate the tax burden of a foreign affiliate in particular and the parent entity as a whole engaged in foreign trade. As a strategic approach to manipulate international tax obligation, international transfer prices are fixed deliberately for goods and services transferred by a parent entity to its affiliate or by one affiliate to another and vice-versa. The foreign affiliate of an MNC operating in a low tax country endeavours to shift its production cost and other chargeable overheads to another foreign affiliate of the MNC operating in a high tax country. This increases the cost of production of the affiliate in high tax country and keeps the cost of production of the affiliate in low tax country resulting in decrease in the taxable profit of the affiliate in high tax country and also consequent increase in the taxable profit of the affiliate in low tax country. The impact of the mechanism will be to shoulder ultimate low tax burden for lowering profits in high tax jurisdiction. This way, international transfer pricing mechanism significantly helps multinational companies to minimize global tax burden.

To demonstrate the magnificent international transfer pricing mechanism to minimize global tax burden as a whole, let us assume a hypothetical example where Lexus International, a global giant in Hong Kong has two wholly owned foreign affiliates Hexa of Hong Kong, a manufacturing subsidiary and Leva of India, a sales affiliate. It is reported that Hexa-Hong Kong consigns 300 pieces Smart Devices at 3,000 INR each to Leva-India which wholesales at 4,000 INR each. Table-1 exhibits in detail the consolidated total profits after tax (after adjusting inter-company sales and cost) and corporate tax liability of Lexus International ascertained at 4,52,000 INR and 1,08,00 INR respectively assuming corporate tax rate is 10% at Hong Kong (assumed a tax haven) and Indian corporate tax rate is 30%.

Table-1: Statement showing International Tax Burden

(Figures in INR)

	Hexa-Hong Kong	Leva-India	Lexus International
Sales	9,00,000	12,00,000	21,00,000
Less : Cost of salesa	5,40,000	9,00,000	14,40,000
Gross Margin	3,60,000	3,00,000	6,60,000
Less : Operating expenses assumed)	60,000	40,000	1,00,000
Profit before tax	3,00,000	2,60,000	5,60,000
Less : Corporate taxb	30,000	78,000	1,08,000
Profit after tax	2,70,000	1,82,000	4,52,000
(a) Assuming cost of sales of Hexa-Hong Kong is 60 % of sales. In case of Leva-India, cost of sales is transfer price of goods received from Hexa-Hong Kong. (b) 10% of 3,00,000 INR and 30% of 2,60,000 INR for Hexa-Hong Kong and Leva-India respectively			

Now, it is assumed that by adopting transfer pricing mechanism for reducing international tax burden, the transfer price (sale price) of 3,000 INR for inter-firm transfer by Hexa-Hong Kong to Leva-India is manipulated at 3,500 INR per piece of Smart Device. This increase in transfer price (sale price) of Hexa-Hong Kong will increase cost of sales of Leva-India by 1,50,000 INR [300 pieces at 500 INR each] and thus a shifting of cost of 1,50,000 INR is made from Hexa-Hong Kong to Leva-India. Table-2 shows the overall international tax burden of Lexus International is computed at 69,000 INR by adopting transfer pricing mechanism.

Table-2 : Statement showing International Tax Burden under Transfer Pricing Mechanism

(Figures in INR)

	Hexa-Hong Kong	Leva-India	Lexus International
Sales	10,50,000	12,00,000	22,50,000
Less : Cost of salesa	6,30,000	10,50,000	16,80,000
Gross Margin	4,20,000	1,50,000	5,70,000

Less : Operating expenses assumed)	60,000	40,000	1,00,000
Profit before tax	3,60,000	1,10,000	2,70,000
Less : Corporate taxb	36,000	33,000	69,000
Profit after tax	3,24,000	77,000	2,01,000
(a) Assuming cost of sales of Hexa-Hong Kong is 60 % of sales. In case of Leva-India, cost of sales is transfer price of goods received (10,50,000 INR) from Hexa-Hong Kong. (b) 10% of 3,60,000 INR and 30% of 1,10,000 INR for Hexa-Hong Kong and Leva-India respectively			

Table-3 shows the impact of manipulating transfer pricing in reducing overall tax burden of Lexus International. It is observed that by adopting the transfer pricing mechanism, the overall global tax burden of Lexus International has decreased from 1,08,000 INR to 69,000 INR showing a reduction of 36.1% as a whole.

Table-3 : Statement showing reduction in International Tax Burden

(Figures in INR)

	Hexa-Hong Kong	Leva-India	Lexus International
Corporate Tax (as per Table-1)	30,000	78,000	1,08,000
Less : Corporate Tax (as per Table-2)	36,000	33,000	69,000
(Increase)/Decrease in tax burden	(6,000)	45,000	39,000
	(20%)	[57.7%]	[36%]
Figures in per cent in parentheses show increase in tax burden of Hexa-Hong Kong and decrease in tax burden of Leva-India and Lexus International			

By adopting transfer pricing mechanism, practically the profit to the tune of 1,50,000 INR has been transferred from Leva-India (operating in high tax country) to Hexa-Hong Kong (operating in a low tax country) since the profit before tax of Leva-India has been computed at 2,60,000 INR (Table-1) as against 1,10,000 INR (Table-2). As a consequence of this shifting of profit of 1,50,000 INR from high tax country to low tax country (from Leva-India, India to Hexa-Hong Kong, Hong Kong) or alternatively by shifting of cost of 1,50,000 INR from low tax country (from Hexa-Hong Kong, Hong Kong) to high tax country (Leva-India, India), Indian tax liability is reduced by 45,000 INR from 78,000 INR (vide Table-1) to 33,000 INR

(vide Table-2), whereas Hong Kong tax liability is increased by 6,000 INR (36,000 INR as per Table-2 as against 30,000 INR as per Table-1). This offers an overall international tax saving in the hands of Lexus International, Hong Kong amounting to 39,000 INR representing Indian tax saving of 45,000 INR minus additional Hong Kong tax liability of 6,000 INR (vide Table-3). This way transfer pricing mechanism effectively helps multinational companies to avail reduction in international tax burden at the cost of host country's tax revenue collection (i.e. India for Leva-India).

However, for less developed countries and developing countries like India, transfer pricing mechanism adopted by MNCs goes against the socio-economic development since MNC operations act as a barrier to mobilize tax revenue from the global players operating in the host country. Besides, MNCs operating in the host countries make substantial changes in human psychology of people of the host countries regarding their buying habits, preference for foreign goods over the domestic goods etc. which distort overall domestic production and indigenous industrial development.

4.4 Controlling International Transfer Pricing

The various world economies are in trouble how to check and control the international transfer pricing since it has the grueling impact to disregard the spirit of tax laws to raise tax revenue on international transactions. In the United States, Section 482 of the Internal Revenue Code empowers the Secretary of the Treasury to adopt measures to prevent a shifting of income or deductions between related taxpayers to exploit differences in national tax rates for which it recommended that transfers between related entities should be based on arm's length price. An arms' length price is one that an unrelated party would receive for the same or similar items under identical or similar situations. In line with other global economies, India has also taken measures to control and check transfer pricing to ensure appropriate tax revenue collection form foreign transactions.

The presence of multinational companies in India and their ability to allocate profits in different tax jurisdictions by controlling prices in intra-group transactions has prompted to take measures relating to control and management of transfer pricing. Transactions between related entities may have inherent advantage as compared to transactions between unrelated entities. Such advantage may be by

means of price concessions, extended credit period, reduced interest rates, lower logistics expenses, etc. With the advent of globalization, multinational companies (MNCs) have established presence in all parts of the world and are conducting business seamlessly. They can enjoy the privileges of doing business with related parties whereas companies which deal with unrelated parties in an open market are not able to exploit such benefits. Therefore, in order to ensure safe and fair dealing among all companies and markets, regulations for transfer pricing was highly needed.

In addition to price related benefits, MNCs may also bear in mind the goal of minimizing tax burden and maximizing profits but the two tax jurisdictions/countries also need to ensure that they are not losing their fair share of tax revenue in such cases. This has raised an internationally accepted practice on the lines that 'transfer pricing' should be governed by the Arm's Length Principle (ALP) and the transfer price should be the price applicable in case of a transaction of arm's length. In other words, in transaction between associates it should be priced in the same way as a transaction between independent enterprises in an uncontrollable manner. The tax authorities implement transfer pricing regulations and strengthen the enforcement in order to prevent a loss of revenue faced by countries where these companies run and operate as a group member.

Thus, to protect each country's fair share in an MNC's total profit, the global tax authorities have established principles under which it can be assumed that related parties deal with each other as if they were independent and this principle is called the arm's length principle.

4.4.1 International Transfer Pricing and India

In the post globalization era, the continued MNC operations in India and the intention of the MNCs to allocate profits in different jurisdictions by controlling prices in intra-group transactions, made the issue of transfer pricing a matter of serious concern for the Indian Government. Just like their global counterparts, the Indian tax authorities presumed the ability or intention of the MNCs to resort to transfer pricing technique to shift profits deliberately from high tax country to low tax country and thereby to avoid Indian tax liability. All these led to the introduction of regulatory framework by Indian Government to check transfer pricing in the country.

Accordingly, sections 92 to 92F had been included in the Income-tax Act, 1961 to deal with issues relating to control and regulate the transfer pricing in the country so as to check tax avoidance by MNCs through international transactions. As per section 92B, an international transaction is one which satisfies the following criteria:

(a) A transaction between two or more associated enterprises, either or both of whom are non-residents;

(b) The transaction is in the nature of purchase, sale or lease of tangible or intangible property, or provision of services, lending or borrowing money or any other transaction having a bearing on the profits, income, losses or assets of such enterprises;

(c) It includes a transaction in the nature of mutual agreement or arrangement between such associated enterprises for the allocation or apportionment of any contribution, cost or other expenses in connection with a benefit, service or facility provided in between such enterprises.

Section 92F prescribes that arm's length price shall be applied in all international transactions entered between persons other than associated enterprises, in an uncontrolled conditions. Section 92C provides that the arm's length price in an international transaction shall be determined by any one of the following methods as follows :

■ Comparable uncontrolled price method;

■ Resale price method;

■ Cost plus method;

■ Profit split method;

■ Transactional net margin method

4.5 Advance Pricing Agreement

Transfer pricing techniques adopted by MNCs in international transactions have much of negative impact on the tax mobilization by the host country where MNCs operate their business functions. The loss of due share of tax revenue that could have

been raised through international taxation is a serious crisis which needs to be duly met. But the blatant wave of globalization and free trade spurs the MNCs to adopt transfer pricing as a means to avoid or reduce international tax burden. The host countries are in despair to lose their due share of tax revenue. A measure to foil this practice of MNCs to unduly avoid international tax burden has been felt all over the globe. Advance Pricing Agreement (APA) has been emerged as a respite to tackle the situation.

Advance Pricing Agreement (APA) is devised as a mechanism whereby taxpayers and taxation authority voluntarily negotiate an agreed transfer price that is binding on both the parties to the agreement. APA is considered beneficial to both the parties of the agreement since by entering into an APA with an associated enterprise (AE), the taxing authority enjoys a certainty of applying for an Advance Pricing Agreement (APA) for settling price in an international transaction with the AE. Under the APA, a specific price for the tentative international transaction is mentioned well in advance and the same price is agreed upon mutually by the taxing authority and the AE to be followed over a certain period for determining tax liability thereof.

As such, APA has the potential to reduce litigation between the parties of the agreement. In India, APA is an agreement entered into between a taxpayer or applicant and the Central Board of Direct Taxes (CBDT) to determine the arm's length price of future intra-company transactions. Once an APA has been entered into with respect to an international transaction, the arm's length price with respect to that international transaction, for the period specified in the APA, will be determined only in accordance with the APA and it shall be binding on the person as well as the Income-tax authorities for the specified transaction and period as covered in the APA.

The APA is a specific agreement which is designed to provide certainty with regard to determination of arm's length price of the international transaction. As it is an agreement in advance, APA reduces the compliance costs by eliminating the risk of transfer pricing audit and resolving long drawn and time consuming litigation. APA also reduces the burden of record keeping, as the taxpayer knows in advance the required documentation to be maintained to substantiate the agreed terms and conditions of the agreement.

4.6 Safe Harbour

A safe harbour is a provision of a statute or a regulation that specifies a certain conduct will be deemed not to violate a given rule. In the case of international transactions, a safe harbour simply means that the transfer price which is declared by the assessee shall be accepted by the income-tax authorities. In international transactions, there are increasing numbers of transfer pricing related disputes between the taxation authorities and the taxpayers who are foreign nationals. These litigations often make the tax settlement more complex and time consuming for which the taxing authorities have to wait long for tax collection at the cost of their national fund. Safe harbor rules in such cases may be the most deserving alternatives to mitigate the tax disputes and to accelerate tax collection and settlement.

Many countries of the globe follow the safe harbour rule to settle long standing tax disputes. In Indian context also, safe harbour rule is followed as a measure to expedite the tax settlement procedure and to mitigate the increasing number of transfer pricing audits and prolonged tax disputes. As per provision of section 92CB of the Indian Income Act, the determination of arm's length price under section 92C or Section 92CA shall be subject to Safe Harbour rules for which CBDT has been empowered to prescribe safe harbour rules. Safe Harbour means circumstances in which the income-tax authorities shall accept the transfer price declared by the assessee. Safe harbour rule is very much significant for inspiring international transactions and if a country unnecessarily continues tax disputes with foreign nationals, the overall economic development of that country will be lagging behind for the lack of international transactions. It is to be noted that in some cases like inflow of foreign capital and technology, life saving drugs and medicines, new generations products, foreign technician services etc. international transactions are inevitable and cannot be avoided. By applying safe harbour rules, tax disputes relating to international transfer pricing may be required to be settled for the cause of attaining overall socio-economic development.

4.7 Summary

In the present era of globalization, liberalization and privatization, there has been much emphasis on international trade. Individual traders, exporting organizations,

and multinational companies around the globe are found to remain busy in international trade with the objective to earn foreign exchange earnings But due to wide diversity in international taxation policy, their attempts to earn foreign income are largely affected since a substantial part of their foreign income is squashed away to pay international tax liability. They find it really difficult to operate globally to attain the objective of maximizing foreign earnings because of the increasing international tax liability and also the frequent changes in tax legislations.

To overcome this impasse, a new concept of transfer pricing has evolved whereby companies operating in different countries undertake the practice of shifting of cost and other expenses from low tax jurisdiction to high tax jurisdiction or of shifting profits from high tax jurisdiction to low tax jurisdiction. This shifting of cost or profits from one country to another has the sparking impact to reduce international tax burden. The MNCs operating with their foreign affiliates spread over different geographical locations in the globe are found to adopt this transfer pricing mechanism successfully to avoid or reduce their global tax burden. In case of intra-firms transfer of goods and services from one unit to another under the common ownership and control, the transfer pricing technique significantly helps the parent global entity to substantially reduce its overall foreign tax liability.

However, this practice of tax avoidance availed by MNCs seriously hampers the tax revenue mobilization of countries (host countries) where the MNCs operate their foreign businesses with the help of their foreign affiliates. In fact, the host countries lose their due share of tax revenue which could have earned by them but for the application of transfer pricing technique by MNCs they fail to do so. This had been a matter of great concern to the governments of various countries for unduly sacrificing their due share of tax revenue likely to rise from foreign traders operating business in their tax jurisdiction. The arms' length principle (ALP) has emerged to check the tendency of MNCs to avoid tax obligation by means of transfer pricing methodology. The introduction of ALP has provided that prices of goods and services for intra-company transfer shall be determined for tax purposes based on arms' length price. The arm's length price is the price that is arrived at for transfers of goods and services between two or more persons who are unrelated and is entered into in an uncontrolled manner.

Transfer prices often come under the scrutiny of taxation authorities when it is found different from the aim's length price to unrelated parties. This scrutiny by

taxation authorities sometimes leads to delay in tax settlements and disgruntlements among the MNCs and other foreign affiliates to operate globally in an uninterrupted manner. To tackle this, advance pricing agreement (APA) has been evolved whereby the taxation authorities and the taxpayers make necessary pricing agreements well in advance that shall be taken into account in case a dispute arises as to the authenticity of arm's length price for determining tax liability. Safe harbour rule is an important tool to mitigate the transfer pricing disputes in international transactions. A safe harbour simply means that the transfer price which is declared by the assessee shall be accepted by the income-tax authorities. Safe harbour rule is very crucial to settling transfer pricing related disputes between the taxation authorities and the taxpayers for the greater interest of motivating international trade for the benefits of both the tax jurisdiction nationals and the global taxpayers.

4.8 Key Words

Arm's Length Price (ALP) : An arms' length price is the price which is entered between two or more unrelated parties in an uncontrolled manner. An arms' length price is one that an unrelated party would receive for the same or similar items under identical or similar situations.

Advance Pricing Agreement (APA) : APA is regarded as a mechanism whereby taxpayers and taxation authority voluntarily negotiate an agreed transfer price that is binding on both the parties to the agreement.

Safe Harbour : A safe harbour is a provision of a statute or a regulation that specifies a certain conduct will be deemed not to violate a given rule. In the case of international transactions, a safe harbour simply means that the transfer price which is declared by the assessee shall be accepted by the income-tax authorities.

Transfer Price : A transfer price is the price which one segment (sub unit, department, division etc.) of an organization charges for a product or service supplied to another segment of the same organization.

4.9 Exercises

1. Define transfer pricing.

2. What is international transfer pricing? State the objectives of international transfer pricing.

3. What is meant by transfer pricing technique? Highlight the significance of international transfer pricing.

4. What are the objectives of using transfer pricing methodology?

5. Explain the impact of transfer pricing technique on international tax liability.

6. What is an arm's length price?

7. What do you mean by arm's length principle?

8. State the importance of arm's length principle in international transaction.

9. What are the different pricing methods for determining arm's length price?

10. What is an international transaction as per 92B?

11. What is meant by advance pricing agreement?

12. Explain the role of advance pricing agreement in settling disputes in international transaction.

13. What do you mean by safe harbour?

14. State the significance of safe harbour rule in international transaction.

Module - 2

Unit - 5 ❑ International Monetary System

Structure

5.0 Objectives

By the end of this lesson, learners will be able to :

● describe the role of IMF,

- understand the concept of Nostro, Vostro and Loro accounts,

- explain the factors affecting the foreign exchange rates,

- compute the direct and indirect exchange rate quotes using bid/ask rates,

- explain the determinants and classification of exchange rates, and

- describe the concepts of Currency Depreciation, Appreciation, Devaluation, Revaluation and currency convertibility.

5.1 Introduction

With the development of increasing integration in global financial markets and the growth in the international trade and financial liberalization, the whole world economies have attracted enormous attention on exchange rate fluctuation and manage exchange rate. After the liberalization, privatization and globalization, the whole world converted in to one nation economy where the national currency plays a vital role for the decision making. The foreign exchange (sometimes abbreviated "forex") market typically conjures up images of a hectic trading room, full of computers and information networks, with traders talking excitedly on telephones. This image is a reality on the trading floors of the world's major banks and other financial institutions that make up the interbank market. It may help to think of the interbank market as the wholesale part of the forex market where banks manage inventories of currencies.

There is also a less hectic retail side of the forex market, where the customers of the foreign exchange dealers buy and sell foreign currencies. These customers are the multinational corporations that market goods and services throughout the world and the institutional investors and money managers that invest capital or speculate throughout the world. The foreign exchange market operates 24 hours per day because the major financial centers where currencies are traded are geographically spread out. When it is midnight in London, England, it is morning in the Pacific and Asian markets. The first market activity is in Sydney (Australia) and Wellington (New Zealand), and it is quickly followed by trading in Tokyo and Osaka (Japan), Hong Kong, and Singapore.

5.2 The International Monetary Fund (IMF)

In the course of its international business activities, an MNC may need financing from an Internationally active bank, use economic information provided by an international organization, operate within a regulatory framework set by local governments or international institutions, and deal with investor relations in several countries.

The IMF is an international organization of 190 member countries, based in Washington, DC, which was conceived at a United Nations conference convened in Bretton Woods, New Hampshire, in 1944. The 45 governments represented at that conference sought to build a framework for economic cooperation that would avoid a repetition of the disastrous economic policies that had contributed to the Great Depression of the 1930s. The main goals of the IMF are to ensure the stability of the international monetary and financial system (the system of international payments and exchange rates among national currencies that enables trade to take place between countries), to help resolve crises when they occur, and to promote growth and alleviate poverty. To meet these objectives, the IMF offers surveillance and technical assistance. Surveillance is the regular dialogue about a country's economic condition and policy advice that the IMF offers to each of its members.

Technical assistance and training are offered to help member countries strengthen their capacity to design and implement effective policies, including fiscal policy, monetary and exchange rate policies, banking and financial system supervision and regulation, and statistics. Economic crisis often occur when countries borrow excessively from foreign lenders and subsequently experience difficulties financing their balance of payments. The IMF is set up to offer temporary financial assistance to give member countries the breathing room they need to correct balance-of-payment problems.

A policy program supported by IMF financing is designed by the national authorities in close cooperation with the IMF, and continued financial support is conditional on effective implementation of this program. This is known as IMF conditionality. The IMF charges market interest rates for these loans. In addition, the IMF also actively works to reduce poverty in countries around the globe, independently and in collaboration with the World Bank and other organizations. Here, loans are

provided at below-market rates. The IMF's main resources are provided by its member countries, primarily through the payment of quotas, which broadly reflect each country's economic size.

5.3 Nostro, Vostro and Loro Accounts

In interbank transactions, foreign exchange is transferred from one account to another account and from one centre to another centre. Therefore, the banks maintain three types of current accounts in order to facilitate quick transfer of funds in different currencies. These accounts are Nostro, Vostro and Loro accounts meaning "our", "your" and "their".

A bank's foreign currency account maintained by the bank in a foreign country and in the home currency of that country is known as Nostro Account or "our account with you". For example, An Indian bank's Swiss franc account with a bank in Switzerland.

Vostro account is the local currency account maintained by a foreign bank/ branch. It is also called "your account with us". For example, Indian rupee account maintained by a bank in Switzerland with a bank in India.

The Loro account is an account wherein a bank remits funds in foreign currency to another bank for credit to an account of a third bank.

5.4 Concept of Exchange Rate

Exchange Rate means the price of a nation's currency in terms of another currency. An exchange rate thus has two components, the domestic currency and a foreign currency, and can be quoted either directly or indirectly. In a direct quotation, the price of a unit of foreign currency is expressed in terms of the domestic currency. In an in-direct quotation, the price of a unit of domestic currency is expressed in terms of the foreign currency. An exchange rate that does not have the domestic currency as one of the two currency components is known as a cross currency, or cross rate.

According to Layman, "an exchange rate is the price of one country's currency expressed in another country's currency. In other words, the rate at which one

currency can be exchanged for another".

According to Shapiro, "an exchange rate is, simply, the price of one nation's currency in terms of another currency, often termed the reference currency".

An exchange rate has a base currency and a counter currency. In a direct quotation, the foreign currency is the base currency and the domestic currency is the counter currency. In an indirect quotation, the domestic currency is the base currency and the foreign currency is the counter currency.

Example

The rupee/dollar exchange rate is just the number of rupee that one dollar will buy. If a dollar will buy 100 rupee, the exchange rate would be expressed as 100/$, and the rupee would be the reference currency. Equivalently, the dollar/rupee exchange rate is the number of dollars one rupee will buy. Continuing the previous example, the exchange rate would be $0.01/₹ (1/100), and the dollar would now be the reference currency.

Most exchange rates use the US dollar as the base currency and other currencies as the counter currency. However, there are a few exceptions to this rule, such as the euro and Commonwealth currencies like the British pound, Australian dollar and New Zealand dollar.

Exchange rates for most major currencies are generally expressed to four places after the decimal, except for currency quotations involving the Japanese yen, which are quoted to two places after the decimal.

Exchange rates can be for spot or forward delivery. A spot rate is the price at which currencies are traded for immediate delivery; actual delivery takes place two days later. A forward rate is the price at which foreign exchange is quoted for delivery at a specified future date. The foreign exchange market, where currencies are traded, is not a physical place; rather, it is an electronically linked network of banks, foreign exchange brokers, and dealers whose function is to bring together buyers and sellers of foreign exchange.

5.4.1 Factors Affecting Foreign Exchange Rates

Foreign Exchange being a commodity like any other commodities, the exchange rates tend to fluctuate from time to time. There are various factors that cause the

fluctuations in the rates of exchange. These factors can be divided into several following groups. These groups can affect the exchange rates on a short term as well as long-term basis.

1. Fundamental Factors

The fundamental factors include all such events that affect the basic economic and fiscal policies of the concerned government. These factors normally affect the long-term exchange rates of any currency. On short-term basis on many occasions, these factors are found to be rather inactive unless the market attention has turned to fundaments. However, in the long run exchange rates of all the currencies are linked to fundamental causes. The fundamental factors are basic economic policies followed by the government in relation to inflation, balance of payment position, unemployment, capacity utilization, trends in import and export, etc. Normally, other things remaining constant the currencies of the countries that follow sound economic policies will always be stronger. Similarly for the countries which are having balance of payments surplus, the exchange rate will always be favorable. Conversely, for countries facing balance of payment deficit, the exchange rate will be adverse. Continuous and ever growing deficit in balance of payment indicates over valuation of the currency concerned and the dis-equilibrium created can be remedied through devaluation.

2. Political and Psychological Factors

Political and psychological factors are believed to have an influence on exchange rates. Many currencies have a tradition of behaving in a particular way for e.g. Swiss franc as a refuge currency. The US Dollar is also considered a safer haven currency whenever there is a political crisis anywhere in the world.

3. Technical Factors

The various technical factors that affect exchange rates can be mentioned as under:

(a) **Capital Movement :** The phenomenon of capital movement affecting the exchange rate has a very recent origin. Huge surpluses of petroleum exporting countries due to sudden spurt in the oil prices could not be utilised by these countries for home consumption entirely and needed to be invested elsewhere productively. Movement of these petro dollars, started affecting

the exchange rates of various currencies. Capital tended to move from lower yielding to higher yielding currencies and as a result the exchange rates moved.

(b) Relative Inflation Rates : It was generally believed until recently that one prima-facie direction for exchange rates to move was in the direction adjusted to compensate the relative inflation rates. For instance, if a currency is already overvalued, i.e., stronger than what is warranted by relative inflation rates, depreciation sufficient enough to correct that position can be expected and vice versa. It is necessary to note that exchange rate is a relative price and hence the market weighs all the relevant factors in a relative term, (in relation to the counterpart countries). The underlying reasoning behind this conviction was that a relatively high rate of inflation reduces a country's competitiveness in international markets and weakens its ability to sell in foreign markets. This will weaken the expected demand for foreign currency (increase in supply of domestic currency and decrease in supply of foreign currency). But during 1981-85 period exchange rates of major currencies did not confirm the direction of relative inflation rates. The rise of the dollar persistently for such a long period discredited this principle.

(c) Exchange rate policy and intervention : Exchange rates are also influenced in no small measure by expectation of changes in regulation relating to exchange markets and official intervention. Official intervention can smoothen an otherwise disorderly market but it is also the experience that if the authorities attempt half-heartedly to counter the market sentiments through intervention in the market, ultimately more steep and sudden exchange rate swings can occur. In the second quarter of 1985 the movement of exchange rates of major currencies reflected the change in the US policy in favour of co-ordinated exchange market intervention as a measure to bring down the value of the dollar.

(d) Interest rates : An important factor for movements in exchange rates in recent years has been difference in interest rates; i.e. interest differential between major countries. In this respect the growing integration of the financial markets of major countries, the revolution in telecommunication

facilities, the growth of specialized asset managing agencies, the deregulation of financial markets by major countries, the emergence of foreign exchange trading etc. having accelerated the potential for exchange rates volatility.

4. Speculation

Speculation or the anticipation of the market participants many a times is the prime reason for exchange rate movements. The total foreign exchange turnover worldwide is many a times the actual goods and services related turnover indicating the grip of speculators over the market. Those speculators anticipate the events even before the actual data is out and position themselves accordingly to take advantage when the actual data confirms the anticipations. The initial positioning and final profit taking make exchange rates volatile. These speculators many a times concentrate only on one factor affecting the exchange rate and as a result the market psychology tends to concentrate only on that factor neglecting all other factors that have equal bearing on the exchange rate movement. Under these circumstances even when all other factors may indicate negative impact on the exchange rate of the currency if the one factor that the market is concentrating comes out positive the currency strengthens.

5. Others

The turnover of the market is not entirely trade related and hence the funds placed at the disposal of foreign exchange dealers by various banks, the amounts which the dealers can raise in various ways, banks' attitude towards keeping open position during the course of a day, at the end of the day, on the eve of weekends and holidays, window dressing operations as at the end of the half year or year, end of the month considerations to cover operations for the returns that the banks have to submit the central monetary authorities etc. — all affect the exchange rate movement of the currencies.

5.4.2 Exchange Rate Quotes

Because exchange rates are relative prices, they can be expressed in two ways. Exchange rates can be quoted in direct terms as the domestic currency price of the foreign currency or in indirect terms as the foreign currency price of the domestic currency.

Direct quote

A currency quotation is the price of a currency in terms of another currency. For example, $1 = ₹ 48.00, means that one dollar can be exchanged for ₹ 48.00. Alternatively, we may pay ₹ 48.00 to buy one dollar.

A direct quote is the home currency price of one unit foreign currency. Thus, in the aforesaid example, the quote $1 = ₹ 48.00 is a direct-quote for an Indian.

For example, in the United Kingdom, people discuss the pound prices of various goods and assets. If you were in the United Kingdom, you might inquire, "How many pounds does it take to purchase that car?" or "What does that car cost?"

In each case, you want to know the number of pounds that must be given up to purchase a specific car. An economist would say the answer to these questions is the value of the car in terms of the pound.

Now, suppose you were in the United Kingdom, and you wanted to travel to Germany. If you thought you might need 1,000 euros on your trip, it would also be natural for you to inquire, "How many pounds does it take to purchase 1,000 euros?" or "What do 1,000 euros cost?" In each case, you want to know the number of pounds that must be given up to purchase this specific number of euros. Once again, economists would say that the answer is the value of 1,000 euros in terms of the pound. If the pound price of the euro is £0.90 > :, the pound cost of 1,000 euros is :1,000 * 1£0.90 > : 2 = £900.

Indirect quotes

An indirect quote is the foreign currency price of one unit of the home currency. The quote Re.1 =$0.0208 is an indirect quote for an Indian. ($1/ ₹ 48.00 =$0.0208 approximately)

For the U.S. dollar, it is common for many exchange rates to be quoted in **indirect quotes**, such as ¥100 > $ for the Japanese yen or CHF 1.8 > $ for the Swiss franc. These exchange rates represent the amount of foreign currency that is equivalent to 1 dollar, which is also the amount of foreign currency required to purchase 1 dollar.

Direct and indirect quotes are reciprocals of each other, which can be mathematically expressed as follows.

Direct quote = 1/indirect quote and vice versa

American Term and European Term

Quotes in *American terms* are the rates quoted in amounts of U.S. dollar per unit of foreign currency. When the exchange rate is given at number of dollars per unit of foreign currency then this is quotation in American terms.

While rates quoted in amounts of foreign currency per U.S. dollar are known as quotes in *European terms.* When the quotation is given as number of units of a currency per unit of dollar then this is known as quotation in European terms.

For example, U.S. dollar 0.2 per unit of Indian rupee is an American quote while INR 44.92 per unit of U.S. dollar is a European quote.

Most foreign currencies in the world are quoted in terms of the number of units of foreign currency needed to buy one U.S. dollar i.e. the European term.

American quote

The phrase American quote refers to the dollar price of a foreign currency—that is, the number of dollars it takes to purchase one unit of the foreign currency.

Exchange rates of the British pound versus the dollar and the euro versus the dollar are commonly expressed directly in dollars per pound.

European quote

The indirect method of quoting exchange rates is also commonly referred to as a **European quot**e (the amount of foreign currency needed to buy dollars) because most former European currencies, such as the Deutsche mark and the French franc, were quoted this way relative to the dollar.

Direct and Indirect, American and European Quotes		
	In the United States (US)	**In the United Kingdom (UK)**
$ per £	Direct	Indirect
$ per £	American	American
£ per $	Indirect	Direct
£ per $	European	European
	In India	**In the United States (US)**
Rupee per $	Direct	Indirect

Bid, Offer/Ask and Spread

A foreign exchange quotes are two-way quotes, expressed as a 'bid' and an offer' (or ask) price. Bid is the price at which the dealer is willing to buy another currency. **Bid rate** is the exchange rate at which the authorized dealer of foreign exchange (usually bank) is willing to buy foreign currency. The offer/ask is the rate at which he is willing to sell another currency. **Ask rate** is the exchange rate at which the authorized dealer of foreign exchange is willing to sell foreign currency. Thus a bid in one currency is simultaneously an offer in another currency.

For example, a dealer may quote Indian rupees as ₹ 48.80 - 48.90 vis-a-vis dollar. That means that he is willing to buy dollars at ₹ 48.80/$ (sell rupees and buy dollars), while he will sell dollar at ₹ 48.90/$ (buy rupees and sell dollars).

The difference between the bid and the offer is called the spread. The offer is always higher than the bid as inter-bank dealers make money by buying at the bid and selling at the offer.

$$\% \text{ Spread} = \frac{\text{Offer or Ask Rate} - \text{Bid Rate}}{\text{Bid Rate}} \times 100$$

It must be clearly understood that while a dealer buys a currency, he at the same time is selling another currency. When a dealer wants to buy a currency, he/she will ask the other dealer a quote for say a million dollars. The second dealer does not know whether the first dealer is interested in buying or selling one million dollars. The second dealer would then give a two-way quote (a bid/offer quote). When the first dealer is happy with the 'ask' price given by the second dealer, he/she would convey "ONE MINE", which means "I am buying one million dollars from you". If the first dealer had actually wanted to sell one million dollars and had asked a quote and he is happy with the 'bid' price given by the second dealer, he/she would convey "ONE YOURS", which means "I am selling one million dollars to you".

Cross Rates

It is the exchange rate which is expressed by a pair of currency in which none of the currencies is the official currency of the country in which it is quoted. For example, if the currency exchange rate between a Canadian dollar and a British pound is quoted in Indian newspapers, then this would be called a cross rate since none of the currencies of this pair is of Indian rupee.

Cross Rate is an exchange rate that is derived from other exchange rates and it does not involve the home currency.

Example :

Cross rate when transaction costs are not involved :

Suppose the exchange rates are :

USD/INR=67.02

EUR/INR=74.68

Compute USD/EUR Cross rate.

Solution :

USD/INR × INR/EUR = USD/EUR

So, $\dfrac{USD/INR}{EUR/INR} = \dfrac{67.02}{74.68} = 0.897$

USD/EUR = 0.897 (It means 1 USD = 0.897 EUR)

5.4.3 Exchange Rate Quotations and Arbitrage

Although the term "market rate" is often used it is not true that all banks will have identical quotes for a given pair of currencies at a given point of time.

For example if Bank A gives the quote given above :

₹ /$: 34.85/34.92

At the same time Bank B quotes

₹ /$: 34.75/34.82

Such a situation will give rise to an arbitrage opportunity. Dollars can be bought at ₹ 34.82 from Bank B and sold at ₹ 34.85 to bank A. Thus giving a net profit of ₹ 0.03 per dollar without any risk or commitment of capital. This would lead to a situation where every dealer would like to buy from Bank B and sell to Bank A. However, in an efficient market this would not be allowed to prevail, if at all it does prevail it will be only for a few moments.

Two Point Arbitrage

If dollars are available in India at ₹ /$: 34.60/34.75 and at the same time Rupees are available in U.S.A at $/₹ :0.0285/0.0287.

In such a situation a trader can buy $ from India at ₹ 34.75 and sell it at U.S.A for ₹ 34.84 (1/0.287). Thus making a net profit of ₹ 0.09 per dollar. This arbitrage transaction in which the trader buys a currency in one market and sells it at a higher price in another market is called "Two Point Arbitrage".

The bid and risk rate for dollars in terms of ₹ in U.S.A is computed as follows :

($ / ₹)bid = 1/(₹ / $)ask

($ / ₹)ask = 1/(₹ / $)bid

The ask on the rupee being the bid on the dollar and vice-versa.

Problem :

A bank in Canada displays the following spot quotation.

C$/$: 1.3690/1.4200

At the same time a bank in New York quotes

$/C$: 0.7100/0.7234

(a) Is there an arbitrage opportunity?

(b) If the Canadian bank lowers its ask rate to 1.3742, Is there an arbitrage opportunity?

(c) If you buy one million U.S. $ from Canada and sell them in U.S.A after the Canadian lowers its ask rate.

What is the riskless profit you will make?

Solution :

(a) If we buy U.S. dollars from Canada we will pay C$ 1.4200 per U.S. dollar. This can be sold in U.S.A for 1.4085 only there by leaving us with a loss. Hence there is no arbitrage opportunity.

$/C$: 0.7100/0.7234

C$/$: [1/($/C)ask]/[1/($/C$)bid]

     : [1/0.7234]/[1/0.7100]

     : 1.3824/1.4085

(b) If the Canadian bank lowers its ask rate to 1.3742 we can buy U.S. $ from Canada for C$ 1.3742 and sell them in U.S.A for C$ 1.4085 per U.S. dollar. Thus making an arbitrage profit of 0.0343 Canadian dollars on every U.S. dollar.

(c)   10,00,000 × 1.3732 =   14,08,500

   10,00,000 × 1.4085 = –13,73,200

             35,300

Thus if one million U.S. dollars are bought from Canada and sold in America after the Canadian bank lowers its ask rate, the riskless profit that can be made is C$ 35,300.

Three Point Arbitrage

Three point arbitrage refers to the transactions wherein a trader deals with three currencies, he starts with currency X, sells it for currency Y, sells currency Y for currency Z, and finally sells currency Z for currency X. After this process he should have more of Z than he began with.

For three currencies X, Y and Z

The no Arbitrage opportunity condition implies :

(X/Y)bid < (X/Z)ask x (Z/Y)ask

(X/Y)ask > (X/Z)bid x (Z/Y)bid

Problem :

A bank in Wales is currently offering the following quotes:

FFr/£ : 7.9970/7.9990

HK$/£ : 11.9071/11.9091

At the same time a bank in Hong Kong is quoting

FFr/HK$: 0.6750/0.6770

Is there an Arbitrage opportunity?

Solution :

One FFr gets £[1/(FFr/£)ask]

=£(1/7.9990)

=£0.1250

£[1/(FFr/£)ask] gets HK$[1/FFr/£)ask] [(FFr/£)bid]

=(1/7.9990) (11.9071)

=1.4884

And finally the amount of FFr is obtained

FFr{[1/(FFr/£)ask][(HK$/£)bid(FFr/HK$)bid]}

FFr [(1/7.9990) (11.9071) (0.6750)] = FFr 1.0048

There is an arbitrage opportunity.

A riskless profit of FFr 1.0048 per French Franc.

Note : Problems given above are not real life situations, these type of arbitrage opportunities seldom appear in the market. Even if it does it will only be for a few moments and efficient traders are bound to take advantage of this situation.

Covered Interest Arbitrage

Investments abroad have to be converted into home currency on maturity. Exchange rate may have changed in the meanwhile. An investor may make a forward sale of funds to be repatriated on maturity. The process of investing abroad for higher returns and making a forward sale of the proceeds is known as covered interest arbitrage. An investment abroad will be undertaken if the return from interest rate differential exceeds the forward margin (difference between the forward and spot exchange rates). In general terms, the forward rate of the foreign currency will contain a discount (premium) if its interest rate is higher (lower) than that of the home currency. Covered interest arbitrages will go on fill the market forces realign the forward margins with the interest rate differentials.

Problem :

If,

– Spot rate : ₹ 42.0010 = $ 1

– 6 month forward rate: ₹ 42.8020 = $ 1

– Annualized interest rate on :

6 month rupee : 12 %

6 month dollar : 8%

Calculate the arbitrage possibilities.

Solution :

The rule is that if the interest rate differential is greater than the premium or discount, place the money in the currency that has a higher rate if interest or vice –versa.

Given the above data :

Negative interest rate differential = (12-8) = 4%

$$\text{Forward premia (annualized)} = \frac{\text{Forward rate} - \text{Spot rate} * 10 * 12}{\text{Spot rate} \times 6}$$

$$= \frac{42.8020 - 42.0010 * 100 * 12}{42.0010 \times 6} = 3.8141\ \%$$

Negative interest rate differential> forward premia, therefore, there is a possibility of arbitrage inflow in India.

Suppose, investment = $1000 by taking a loan @ 8% in US. Invest in India at spot rate of ₹ 42.0010 @ 12 % for six months and cover the principal + interest in the six month forward rate. Principal= $ 1000 = ₹ 42001.

Interest on investment for six months = ₹ 42,001 * 12/ 100* 6/12

$$= ₹ 2520.06$$

Amount at the end of six months = Interest + Principal

= ₹ 42001+ 2520.06

= ₹ 44,521.06

Converting the above in dollars at the forward rate

= $ 44,521.06 / 42.8020

= $ 1,040.16

The arbitrageur will have to pay at the end of six months

= $1,000 + ($1000* 8/100 *6 /12)

Hence, the arbitrageur gains ($1040.16 -$1040) = $ 0.16 on borrowing $1000 for six months.

Problem :

If,

– Spot rate : ₹ 44.0030 = $ 1

– 6 month forward rate : ₹ 45.0010 = $ 1

Annualised interest rate on :

– 6 month rupee : 12 %

– 6 month dollar : 8%

Calculate the arbitrage possibilities.

Solution :

The rule is that if the interest rate differential is greater than the premium or discount, place the money in the currency that has a higher rate if interest or vice –versa.

Given the above data :

– Negative interest rate differential = (12 – 8) = 4%

– Forward premia (annualised) = $\dfrac{\text{Forward rate} - \text{Spot rate} \times 100 \times 12}{\text{Spot rate} \times 6}$

$$= \dfrac{(45.0010 - 44.0030) * 100 * 12}{44.30 \times 6} = 4.5361\%$$

Here, Negative interest rate differential < forward premia, therefore, there is a possibility of arbitrage inflow in US. Suppose, investment = ₹ 10,000 by taking a loan @ 12% in India.

Invest in US at spot rate of ₹ 44.0030 @ 8 % for six months (US $ 227.257) and cover the principal + interest in the six month forward rate.

Amount at the end of six months = Interest + Principal

= ($227.257* 8)/ (100* 6/12)

= $ 236.3473

Sell US $ at 6 month forward to receive 236.3473* 45.0010= ₹ 10635.865

Return the rupee debt borrowed at 12%. The amount to be refunded is ? 10,600

Profit= ₹ 10635.865 – 10600.000= ₹ 35.865

5.4.4 Determination of Exchange Rates

There is no generally accepted theory or model to determine exchange rates. However, there are certain approaches which provide a general framework for analysis of exchange rates which are discussed below :

(a) **Balance of payments :** If payments by a country for its imports of goods and services and invisibles are out of step with its receipts for exports of goods and services and invisible, two possibilities arise. One, foreign currency payments exceed receipts and there is a deficit. This puts the home currency of the country under downward pressure against foreign currencies. Two, there is a surplus and there is an upward pressure on the home currency. In the former case, the home currency tends to depreciate, and in the latter to appreciate, against foreign currencies.

(b) **Demand and supply :** The demand for a foreign currency to pay for imports, etc. and the supply of a foreign currency by way of receipts on account of exports, etc. vary at various rates of exchange. The rate which equilibrates the demand and supply should be the rate of exchange. Imagine a New York City firm exports its products to a German company. The business transaction will be settled in dollars so the American firm obtains revenue in its own currency and can pay its employees' salaries in dollars. To facilitate the transaction, the German firm needs to convert some of its capital from euros to dollars on the foreign exchange market. The supply of euros increases leading to an appreciation of the dollar and depreciation of the euro. It can also be said that the German firm increases the demand for dollars, again causing the dollar to appreciate in comparison to the euro. This transaction would have to be for a very large contract in order for the exchange rate to actually move a pip up or down.

(c) **Purchasing power parity :** This theory maintains that free international trade equalises prices of tradable goods in different countries. So, a product will sell for the same price in common currency in all countries. Different rates of changes in prices i.e. different inflation rates must eventually induce off-setting changes in exchange rates in order to restore approximate price equality. Mathematically, the rate (or the expected rate) of change of the exchange rate should equal the rate (or the expected rate) of change of the

inflation rate. Evidence shows that there do exist disparities between changes in observed exchange rates and those in inflation rates in the short-run. But, the theory should hold in the long-run.

(d) Interest rate : Interest rates are often highly related with inflation rates, and interest rate differentials between countries may be the result of inflation rate differentials. Therefore, interest rate differentials are also used as an important determinant of exchange rates. Interest rates in a country are determined, under free market conditions, by supply of and demand for money. Funds flow across countries in search of opportunities for higher returns. These flows between any two countries cause opposite changes in demand of and supply for their respective currencies. According to the theory of International Fisher Effect, the exchange rate of a currency with higher interest rate will depreciate to offset the interest rate advantage achieved by foreign investments till an equilibrium is achieved.

(e) Relative income levels : If income level in a country rises and that in her trading partner remains unchanged, the demand by the former for the goods of the latter may increase. That is, the former would need more units of currency of the latter, while their supply remains unchanged. This would put upward pressure on the exchange rate of the latter. There can be different configurations of the relative income levels and of corresponding exchange rates.

(f) Market expectations : Like other financial markets, foreign exchange markets react to any news that may have an effect on exchange rates in future. Expected developments regarding polity, economy etc. of a country is used to figure out how exchange rates would move. These peeps into the future impinge on the present as well as the future spot rates.

5.4.5 Classification of Exchange Rate System

(i) Fixed Exchange Rate

A fixed exchange rate, sometimes (less commonly) called a pegged exchange rate, is a type of exchange rate regime wherein a currency's value is matched to the value of another single currency or to a basket of other currencies, or to another measure of value, such as gold. As the reference value rises and falls, so does the

currency pegged to it. In addition, fixed exchange rates deprive governments of the use of an independent domestic monetary policy to achieve internal stability. A former president of the Federal Reserve Bank of New York described fixed currencies as follows :

"Fixing the value of the domestic currency relative to that of a low-inflation country is one approach central banks have used to pursue price stability. The advantage of an exchange rate target is its clarity, which makes it easily understood by the public. In practice, it obliges the central bank to limit money creation to levels comparable to those of the country to whose currency it is pegged. When credibly maintained, an exchange rate target can lower inflation expectations to the level prevailing in the anchor country. Experiences with fixed exchange rates, however, point to a number of drawbacks. A country that fixes its exchange rate surrenders control of its domestic monetary policy."

In certain situations, fixed exchange rates may be preferable for their greater stability. For example, the Asian financial crisis was improved by the fixed exchange rate of the Chinese renminbi, and the IMF and the World Bank now acknowledge that Malaysia's adoption of a peg to the US dollar in the aftermath of the same crisis was highly successful. Following the devastation of World War II, the Bretton Woods system allowed Western Europe to have fixed exchange rates until 1970 with the US dollar. Yet others argue that the fixed exchange rates (implemented well before the crisis) had become so immovable that it had masked valuable information needed for a market to function properly. That is, the currencies did not represent their true market value. This masking of information created volatility which encouraged speculators to "attack" the pegged currencies and as a response these countries attempt to defend their currency rather than allow it to devalue. These economists also believe that had these countries instituted floating exchange rates, as opposed to fixed exchange rates, they may very well have avoided the volatility that caused the Asian financial crisis. Countries like Malaysia adopted increased capital controls believing that the volatility of capital was the result of technology and globalization, rather than fallacious macroeconomic policies which resulted not in better stability and growth in the aftermath of the crisis but sustained pain and stagnation.

Countries adopting a fixed exchange rate must exercise careful and strict adherence to policy imperatives, and keep a degree of confidence of the capital markets in the management of such a regime, or otherwise the peg can fail. Such was

the case of Argentina, where unchecked state spending and international economic shocks disbalanced the system and ended up forcing an extremely damaging devaluation (see Argentine Currency Board, Argentine economic crisis, and the Mexican peso crisis). On the opposite extreme, China's fixed exchange rate with the US dollar until 2005 led to China's rapid accumulation of foreign reserves, placing an appreciating pressure on the Chinese yuan.

A government or central bank using a fixed exchange rate has linked the value of its currency to the value of another country's currency, or the price of gold. With a fixed exchange rate, a country determines that the value of a single unit of its currency is worth a certain amount of another country's currency.

For instance, a small country fixes its currency to the U.S. dollar, saying one unit of its money is worth $2. To maintain the rate, the country's central bank will buy or sell its own currency on the foreign exchange market in return for U.S. dollars. This will keep the exchange rate steady. But it requires the small country to maintain a large amount of U.S. dollars in reserve so that it can release or absorb extra dollars when necessary.

Fixed exchange rates enable a currency's value to remain relatively stable, and can help lower inflation, which encourages investment. But a fixed exchange rate can also cause problems. A smaller country that fixes its currency to a larger country's currency loses its monetary independence, and in some instances, its control.

A fixed exchange rate is also known as a pegged exchange rate. A pegged exchange rate occurs when one country fixes its currency's value to the value of another country's currency. It makes the exchange rate between the two countries constant and stable. But pegging an exchange rate has both pros and cons.

Advantages of Fixed/Pegged Exchange Rate

The biggest advantages come from the effect it has on a country's exports and trade, especially between a nation with low production costs and another country with a stronger currency. A richer, more mature nation may choose to produce its goods in a less mature nation, where production costs are smaller. When those less mature nations translate their earnings into their domestic currencies, they make a larger profit, creating a win/win situation for both countries. A pegged exchange rate also supports a rising standard of living and economic growth. And it protects a

nation from volatile swings in the foreign exchange rate, which reduces the likelihood of a currency crisis.

Disadvantages of Fixed/Pegged Exchange Rate

Among the disadvantages is the large amount of reserves a central bank has to maintain to make a pegged exchange rate work. Those large reserves can spark higher inflation, which causes prices to rise, creating problems for a country's economic stability. The central bank must also buy or sell its currency on the open market to keep its value in line with the pegged nation's currency.

Maintaining a fixed exchange rate

Typically, a government wanting to maintain a fixed exchange rate does so by either buying or selling its own currency on the open market. This is one reason governments maintain reserves of foreign currencies. If the exchange rate drifts too far below the desired rate, the government buys its own currency off the market using its reserves. This places greater demand on the market and pushes up the price of the currency. If the exchange rate drifts too far above the desired rate, the opposite measures are taken. Another, less used means of maintaining a fixed exchange rate is by simply making it illegal to trade currency at any other rate. This is difficult to enforce and often leads to a black market in foreign currency. Nonetheless, communist countries are highly successful at using this method due to government monopolies over all money conversion. This is the method employed by the Chinese government to maintain a currency peg or tightly banded float against the US dollar. Throughout the 1990s China was highly successful at maintaining: a currency peg using a government monopoly over all currency conversion between the Yuan and other currencies.

Criticisms

The main criticism of fixed exchange rate is that flexible exchange rates serve to automatically adjust the balance of trade. When a trade deficit occurs, there will be increased demand for the foreign (rather than domestic) currency which will push up the price of the foreign currency in terms of the domestic currency.' That in turn makes the price of foreign goods less attractive to the domestic market and thus pushes down the trade deficit. Under fixed exchange rates, this automatic re-balancing does not occur.

Despite the negatives, many major and minor economies favour a pegged exchange rate. A country can gain trading advantages while protecting its economic interests, but these advantages come at a price.

(ii) Floating Exchange Rate

A floating exchange rate is a country's exchange rate regime where its currency is set by the foreign-exchange market through supply and demand for that particular currency relative to other currencies. Thus, floating exchange rates change freely and are determined by trading in the forex market. This is in contrast to a "fixed exchange rate" regime.

Floating rate may also refer to a floating interest rate applied to a loan or other lending product. A floating exchange rate or a flexible exchange rate is a type of exchange rate regime wherein a currency's value is allowed to fluctuate according to the foreign exchange market. A currency that uses a floating exchange rate is known as a floating currency. The opposite of a floating exchange rate is a fixed exchange rate. Many economists think that, in most circumstances, floating exchange rates are preferable to fixed exchange rates. They allow the dampening of shocks and foreign business cycles. However, in certain situations, fixed exchange rates may be preferable for their greater stability and certainty. This may not necessarily be true, considering the results of countries that attempt to keep the prices of their currency "strong" or "high" relative to others, such as the UK or the Southeast Asia countries before the Asian currency crisis.

Canada is the only country whose currency's value is determined absolutely and entirely by the foreign exchange market; in cases of extreme appreciation or depreciation, a central bank will normally intervene to stabilize the currency. Thus, the exchange rate regimes of floating currencies may more technically be known as a managed float. A central bank might, for instance, allow a currency price to float freely between an upper and lower bound, a price "ceiling" and "floor". Management by the central bank may take the form o f buying or selling large lots in order to provide price support or resistance, or, in the case of some national currencies, there may be legal penalties for trading outside these bounds.

Fear of floating

A free floating exchange rate increases foreign exchange volatility. This may

cause serious problems, especially in emerging economies. These economies have a financial sector with one or more of following conditions :

● high liability dollarization

● financial fragility

● strong balance sheet effects

When liabilities are denominated in foreign currencies while assets are in the local currency, unexpected depreciations of the exchange rate deteriorate bank and corporate balance sheets and threaten the stability of the domestic financial system. For this reason emerging countries appear to face greater fear of floating, as they have much smaller variations of the nominal exchange rate, yet face bigger shocks and interest rate and reserve movements. This is the consequence of frequent free floating countries' reaction to exchange rate movements with monetary policy and/or intervention in the foreign exchange market.

(iii) Dual and Multiple Exchange Rate

When faced with a sudden shock to its economy, a country can opt to implement a dual or multiple foreign-exchange rate system. With this type of system, a country has more than one rate at which its currencies are exchanged. So, unlike a fixed or floating system the dual and multiple systems consist of different rates, fixed and floating, that are used for the same currency during the same period of time.

In a dual exchange rate system, there are both fixed and floating exchange rates in the market. The fixed rate is only applied to certain segments of the market, such as "essential" imports and exports and/or current account transactions. In the meantime, the price of capital account transactions is determined by a market driven exchange rate.

In a multiple exchange rate system, the concept is the same, except the market is divided into many different segments, each with its own foreign exchange rate, whether fixed or floating. Thus, importers of certain goods "essential" to an economy may have a preferential exchange rate while importers of "non-essential" or luxury goods may have a discouraging exchange rate. Capital account transactions could, again, be left to the floating exchange rate.

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has more than one rate at which its currencies are exchanged. So, unlike a fixed or floating system the dual and multiple systems consist of different rates, fixed and floating, that are used for the same currency during the same period of time.

A multiple system is usually transitional in nature and is used as a means to alleviate excess pressure on foreign reserves when a shock hits an economy and causes inves-tors to panic and pull out. It is also a way to subdue local inflation and importers' de-mand on foreign currency. Most of all, in times of economic turmoil, it is a mecha-nism by which governments can quickly implement control over foreign currency transactions. Such a system can buy some extra time for the governments in their at-tempts to fix the inherent problem in their balance of payments. This extra time is par-ticularly important for fixed currency regimes, which may be forced to completely devalue their currency and turn to foreign institutions for help.

Instead of depleting precious foreign reserves, the government diverts the heavy demand for foreign currency to the free-floating exchange rate market. Changes in the free floating rate will reflect demand and supply.

The use of multiple exchange rates has been seen as an implicit means of imposing tariffs or taxes. For example, a low exchange rate applied to food imports functions like a subsidy, while the high exchange rate on luxury imports works to "tax" people importing goods which, in a time of crisis, are perceived as non-essential. On a similar note, a higher exchange rate in a specific export industry can function as a tax on profits.

While multiple exchange rates are easier to implement, most economists agree that the actual implementation of tariffs and taxes would be a more effective and transparent solution: the underlying problem in the balance of payments could thus be ad-dressed directly.

While the system of multiple exchange rates may sound like a viable quickfix solution, it does have negative consequences. More often than not, because the market segments are not functioning under the same conditions, a multiple exchange rate results in a distortion of the economy and a misallocation of resources. For example, if a certain industry in the export market is given a favourable foreign exchange rate, it will develop under artificial conditions. Resources allocated to the industry will not necessarily reflect its actual need because its performance has been

unnaturally inflated. Profits are thus not accurately reflective of performance, quality, or supply and demand. Participants of this favored sector are (unduly) rewarded better than other export market participants. An optimal allocation of resources within the economy can thus not be achieved.

A multiple exchange rate system can also lead to economic rents for factors of production benefiting from implicit protection. This effect can also open up doors for in-creased corruption because people gaining may lobby to try and keep the rates in place. This, in turn, prolongs an already inefficient system.

Finally, multiple exchange rates result in problems with the central bank and the federal budget. The different exchange rates likely result in losses in foreign currency transactions, in which case the central bank must print more money to make up for the loss. This, in turn, can lead to inflation.

5.5 Currency Depreciation, Appreciation, Devaluation and Revaluation

Economic activity is globally unified today to an unprecedented degree. Changes in one nation's economy are rapidly transmitted to that nation's trading partners. These fluctuations in economic activity are reflected, almost immediately, in fluctuations in currency values. Consequently, multinational corporations (MNCs), with their integrated cross-border production and marketing operations, continually face devaluation or revaluation worries somewhere in the world.

> Devolution in the deliberate downward adjustment of a country's currency value. Devalning a currency reduces the cost a country's expats and can help shyinle trade deficit. Revaluation is the opposite to devaluation.

5.5.1 Currency Depreciation and Appreciation

The terms **appreciation** and **depreciation** are typically used to describe changes in exchange rates when exchange rates are allowed to be flexible—that is, to fluctuate freely in response to changes in demand and supply.

The fixed rate, which in turn attracts the unwanted attention of currency

speculators who waste little time in testing the resolve of the central bank to defend the fixed exchange rate. A central bank must have sufficient foreign exchange reserves to be willing to buy all the offered amounts of its currency at the fixed exchange rate. If these forex reserves are insufficient, the bank may have no option but to devalue the currency.

Effects on the Economy

Devaluation often has an adverse effect on the economy initially, although it eventual-ly results in a substantial increase in exports and a concomitant shrinkage in the cur-rent account deficit, a phenomenon known as the J-Curve. In the initial period after devaluation, imports become much more expensive while exports stay stagnant, lead-ing to a larger current account deficit. The lower value of the domestic currency may also result in imported items costing much more, leading to "imported" inflation. Over time, however, the lower domestic currency makes exports more competitive in global markets, while consumers may eschew expensive imports, leading to an improvement in the current account deficit.

5.5.2 Currency Convertibility

For the rapid growth of world trade and capital flows between countries convertibility of a currency is desirable. Without free Currency Depreciation is a decrease in the value of a currency relative to another currency. A depreciated currency is less valuable (less expensive) and therefore can be exchanged for (can buy) a smaller amount of foreign currency.

For example, $1/•1 → $1.20/•1 means that the dollar has depreciated against the euro. It now takes $1.20 to buy one euro, so that the dollar is less valuable. At the same time, the euro has appreciated against the dollar: it is now more valuable.

Currency Appreciation is an increase in the value of a currency relative to another currency. An appreciated currency is more valuable (more expensive) and therefore can be exchanged for (can buy) a larger amount of foreign currency.

For example, $1/•1 → $0.90/•1 means that the dollar has appreciated against the euro. It now takes only $0.90 to buy one euro, so that the dollar is relatively more valuable. The euro has depreciated against the dollar: it is now relatively less valuable.

A depreciated currency is less valuable, and therefore it can buy fewer foreign-produced goods with prices that are quoted in foreign currency terms.

Example :

● How many yen does a Japanese Honda cost? ¥3,000,000

● ¥3,000,000 × \$0.0098/¥1 = \$29,400

● ¥3,000,000 × \$0.0100/¥1 = \$30,000

A depreciated currency means that imports are more expensive and domestically produced goods and exports are less expensive. A depreciated currency lowers the price of exports relative to the price of imports.

An appreciated currency is more valuable, and therefore it can buy more foreign produced goods that are denominated in foreign currency.

Example :

● How much does a Honda cost ? ¥3,000,000

● ¥3,000,000 × \$0.0098/¥1 = \$29,400

● ¥3,000,000 × \$0.0090/¥1 = \$27,000

An appreciated currency means that imports are less expensive and domestically produced goods and exports are more expensive. An appreciated currency raises the price of exports relative to the price of imports.

5.5.3 Currency Devaluation and Revaluation

Sometimes, the government authorities of a country "fix," or "peg," the exchange rate of their money relative to a foreign money. Discrete changes in the values of exchange rates under such a fixed exchange rate system are called **devaluations** and **revaluations** of the currencies. If the monetary authorities increase the domestic currency price of foreign exchange, they are devaluing their money. Such actions increase the domestic currency prices of foreign monies and are often the result of a failure in government policy.

Causes of Devaluation and Revaluation

While devaluation is far more common than revaluation, both occur because the ex-change rate has been fixed at an artificially low or high level. This makes it increasingly difficult for the central bank to defend t and unrestricted convertibility of currencies into foreign exchange trade and capital flows between countries cannot take place smoothly. Therefore, to achieve higher rate of economic growth and

thereby to improve living standards through greater trade and capital flows, the need for convertibility of currencies of different nations has been greatly felt. Under Bretton Woods system fixed exchange rate system was adopted by various countries. In order to maintain the exchange rate of their currencies in terms of dollar or gold various countries imposed several controls over the use of foreign exchange. This required some restrictions on the use of foreign exchange and its allocation among different uses, the currency of a nation was converted into foreign exchange on the basis of officially fixed exchange rate.

When Bretton Woods system collapsed in 1971, the various countries switched over to the floating foreign exchange rate system. Under the floating or flexible exchange rate system, exchange rates between different national currencies are allowed to the determined through market demand for and supply of them. However, various countries still imposed restrictions on the free convertibility of their currencies in view of their difficult balance of payment situation.

5.5.4 Meaning of Currency Convertibility

By convertibility of a currency we mean currency of a country can be freely converted into foreign exchange at market determined rate of exchange that is, exchange rate as determined by demand for and supply of a currency.

For example, convertibility of rupee means that those who have foreign exchange (e.g. US dollars, Pound Sterlings etc.) can get them converted into rupees and vice-versa at the market determined rate of exchange. Under convertibility of a currency there are authorized dealers of foreign exchange which constitute foreign exchange market. The exporters and others who receive US dollars, Pound Sterlings etc. can go to these dealers which are generally banks and get their dollars exchanged for rupees at the market determined rates of exchange. Similarly, under currency convertibility, importers and other who require foreign exchange can go to these banks dealing in foreign exchange and get rupees converted into foreign exchange.

5.5.5 Current Account and Capital Account Convertibility of Currency

A currency may be convertible on current account (that is, exports and imports of merchandise and invisibles) only. A currency may be convertible on both current and capital accounts. We have explained above the convertibility of a currency on current account only.

By capital account convertibility we mean that in respect of capital flows, that is, flows of portfolio capital, direct investment flows, flows of borrowed funds and dividends and interest payable on them, a currency is freely convertible into foreign exchange and vice-versa at market determined exchange rate. Thus, by convertibility of rupee on capital account means those who bring in foreign exchange for purchasing stocks, bonds in Indian stock markets or for direct investment in power projects, highways steel plants etc. can get them freely converted into rupees without taking any permission from the government.

Likewise, the dividends, capital gains, interest received on purchased stock, equity etc. profits earned on direct investment get the rupees converted into US dollars, Pound Sterlings at market determined exchange rate between these currencies and repatriate them. Since capital convertibility is risky and makes foreign exchange rate more volatile, is introduced only sometime after the introduction of convertibility on current account when exchange rate of currency of a country is relatively stable, deficit in balance of payments is well under control and enough foreign exchange reserves are available with the Central Bank.

5.5.6 Convertibility of Indian Rupee

In the seventies and eighties many countries switched over to the free convertibility of their currencies into foreign exchange. By 1990, 70 countries of the world had introduced currency convertibility on current account; another 10 countries joined them in 1991. As a part of new economic reforms initiated in 1991 rupee was made partly convertible from March 1992 under the "Liberalised Exchange Rate Management scheme in which 60 per cent of all receipts on current account (i.e., merchandise exports and invisible receipts) could be converted freely into rupees at market determined exchange rate quoted by authorised dealers, while 40 per cent of them was to be surrendered to Reserve Bank of India at the officially fixed exchange rate.

These 40 per cent exchange receipts on current account was meant for meeting Government needs for foreign exchange and for financing imports of essential commodities. Thus, partial convertibility of rupee on current account meant a dual exchange rate system. This partial convertibility of rupee on current account was adopted so that essential imports could be made available at lower exchange rate to

ensure that their prices do not rise much. Further, full convertibility of rupees at that stage was considered to be risky in view of large deficit in balance of payments on current account. As even after partial convertibility of rupee foreign exchange value of rupee remained stable, full convertibility on current account was announced in the budget for 1993-94. From March 1993, rupee was made convertible for all trade in merchandise. In March' 1994, even indivisibles and remittances from abroad were allowed to be freely convertible into rupees at market determined exchange rate. However, on capital account rupee remained nonconvertible.

5.5.7 Advantages of Currency Convertibility

Convertibility of a currency has several advantages which we discuss briefly:

1. Encouragement to exports :

An important advantage of currency convertibility is that it encourages exports by increasing their profitability. With convertibility profitability of exports increases because market foreign exchange rate is higher than the previous officially fixed exchange rate. This implies that from given exports, exporters can get more rupees against foreign exchange (e.g. US dollars) earned from exports. Currency convertibility especially encourages those exports which have low import-intensity.

2. Encouragement to import substitution :

Since free or market determined exchange rate is higher than the previous officially fixed exchange rate, imports become more expensive after convertibility of a currency. This discourages imports and gives boost to import substitution.

3. Incentive to send remittances from abroad :

Thirdly, rupee convertibility provided greater incentives to send remittances of foreign exchange by Indian workers living abroad and by NRI. further, it makes illegal remittance such 'hawala money' and smuggling of gold less attractive.

4. A self – balancing mechanism :

Another important merit of currency convertibility lies in its self-balancing mechanism. When balance of payments is in deficit due to over-valued exchange rate, under currency convertibility, the currency of the country depreciates which gives boost to exports by lowering their prices on the one hand and discourages

imports by raising their prices on the other. In this way, deficit in balance of payments get automatically corrected without intervention by the Government or its Central bank. The opposite happens when balance of payments is in surplus due to the undervalued exchange rate.

5. Specialisation in accordance with comparative advantage :

Another merit of currency convertibility ensures production pattern of different trading countries in accordance with their comparative advantage and resource endowment. It is only when there is currency convertibility that market exchange rate truly reflects the purchasing powers of their currencies which is based on the prices and costs of goods found in different countries.

Since prices in competitive environment reflect that prices of those goods are lower in which the country has a comparative advantage, this will encourages exports. On the other hand, a country will tend to import those goods in the production of which it has a comparative disadvantage. Thus, currency convertibility ensures specialization and international trade on the basis of comparative advantage from which all countries derive benefit.

6. Integration of World Economy :

Finally, currency convertibility gives boost to the integration of the world economy. As under currency convertibility there is easy access to foreign exchange, it greatly helps the growth of trade and capital flows between the countries. The expansion in trade and capital flows between countries will ensure rapid economic growth in the economies of the world. In fact, currency convertibility is said to be a prerequisite for the success of globalization.

Currencies and Symbols

An exchange rate is the relative price of two monies, such as the Japanese yen price of the U.S. dollar, the British pound price of the euro, or the Brazilian real price of the Mexican peso. Rather than write out the full name of these currencies, contractual parties use abbreviations. In banking and commercial transactions, it is important that all parties understand which currencies are being used. Hence, there is a need for standardization of the abbreviations. The International Organization for Standardization (called ISO from the Greek word for equal) sets these standards.

Coumntry	Currency	ISO 4217 Code/ Symbols
Afghanistan	Afghani	AFN/ Af
Argentina	Peso	ARS $
Australia	Dollar	AUD/ A $
Bangladesh	Taka	BDT
Bhutan	Ngultrum	BTN/ Nu
Brazil	Real	BRL/ R$
Britain	Pound	GBP/ £
Canada	Dollar	CAD/ C $
Chile	Peso	CLP/ $ or
China	Yuan Renminbi	CNY/ RMB/ ¥
Colombia	Peso	COP/ $
Cuba	Peso	CUP/ $ or $MN
Czech Republic	Koruna	CZK/Kc
Denmark	Kroner	DKK/ kr
Eurozone countries : Austria,		
Belgium,Cyprus,Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia,Lithuania,Luxembourg, Malta, Netherlands (The), Portugal,Slovakia, Slovenia, Spain	Euro	EUR/ •
Hong Kong	Dollar	HKD/ HK$
Hungary	Forint	HUF/ Ft
India	Rupee	INR/
Indonesia	Rupiah	IDR/ Rp
Iran	Rial	IRR/ Rls.
Iraq	Dinar	IQD

Coumntry	Currency	ISO 4217 Code/ Symbols
Israel	New Shekel	ILS
Japan	Yen	JPY/ ¥
Jordan	Dinar	JOD
Kampuchea	Riel	KHR
Kenya	Schilling	KES/ KSh
Korea (North)	Won	KPW/ W
Korea (South)	Won	KRW/ W
Kuwait	Dinar	KWD/ KD
Malaysia	Ringgit	MYR/ M$
Mexico	Peso	MXN/ Mex$
Myanmar	Kyat	MMK/ K
Mongolia	Tugrik	MNT/ T
Nepal	Rupees	NPR/ Rs
New Zealand	Dollar	NZD/ NZ$
Norway	Kroner	NOK/ kr
Pakistan	Rupee	PKR/ Rs
Philippines	Peso	PHP/ P
Poland	Zloty	PLN/zl
Russia	Rouble	RUB
Saudi Arabia	Riyal	SAR/ SR
Singapore	Dollar	SGD/ S$
South Africa	Rand	ZAR/ R
Sri Lanka	Rupee	LKR/ Rs
Sweden	Kronor	SEK/ kr
Switzerland	Franc	CHF/ SFr
Taiwan	New Dollar	TWD/ NT$
Thailand	Baht	THB/ ?

Coumntry	Currency	ISO 4217 Code/ Symbols
Turkey	Lira	TRY/ TL
United Arab Emirates	Dirham	AED
United States of America	Dollar	USD/ $
Vietnam	Dong	VND/ d
Zimbabwe	Zimbabwe Dollar	ZWL/ Z$

5.6 Summary

The importance of International Monetary Fund in global economy which provides surveillance and technical assistance to foster international monetary and financial stability is discussed in the unit. In this context, to make the interbank transactions smooth, banks maintain three types of current accounts (i.e Nostro, Vostro and Loro) to ensure quick uninterrupted transfer of funds in different currencies between the international banks. In order to determine the exchange rate for the currencies globally, the foreign exchange market (also known as Forex market) has emerged and the fixation of the exchange rates which can be quoted in direct terms or in indirect terms has been explained. Concept and computation of two-way quotes, expressed as a 'bid' and 'offer or ask price' and the difference between bid and ask is called spread is dealt in this unit. The concept of Fixed Exchange Rate, Floating Exchange Rate, Dual/Multiple Exchange Rate, currency appreciation, depreciation, devaluations and revaluations is also explained under this unit with suitable examples.

5.7 Exercise

Short Answer type :

1. Discuss in brief the main objectives of IMF.

2. Explain the concept of exchange rate with example.

3. Discuss direct and indirect quotes with examples.

4. What is covered Interest Arbitrage?

5. What do you understand by the term 'cross rates'?

Long Answer type :

1. Differentiate between Nostro, Vostro and Loro accounts.

2. Explain in brief the various factors affecting the foreingn exchange rates.

3. Determine the cross-rate between INR and ZAR based on the following information:

   INR/USD : 75.37 (one -way spot exchange rate between INR and USD as on 31.03.2020)

   ZAR/USD : 17.73 (one-way spot exchange rate between ZAR and USD as on 31.03.2020)

   [Hints : 1 ZAR = (75.37/17.73) INR = 4.25 INR (Answer in Direct Quote) or, 1 INR = (17.73/75.37) ZAR = 0.2352 ZAR (Answer in Indirect Quote)]

4. Write short notes on :

   (a) Currency Appreciation

   (b) Currency Depreciation

   (c) Fixed exchange Rate

   (d) Floating exchange Rate

5. Discuss in brief the current account and capital account convertibility of currency. Explain the advantages of currency convertibility.

Unit - 6 ❑ Foreign Exchange and Derivative Markets.

Structure

6.0 Objectives

By the end of this lesson, learners will be able to:

- describe the concept of Foreign Exchange,

- understand major types of foreign exchange market,

- explain the concept of Derivative Market,

- describe the concepts of Spot, Forward, Future, Options and Swaps,

- compute various numerical problems relating to the financial derivatives

6.1 Introduction

A foreign exchange rate, which is also called a forex rate or currency rate,

represents the value of a specific currency compared to that of another country. The Foreign Exchange Market (Forex, FX, or currency market) is a form of exchange for the global decentralized trading of international currencies. It is the market in which individuals, firms and banks buy and sell foreign currencies or foreign exchange. Financial centres around the world function as anchors of trading between a wide range of buyers and sellers around the clock, with the exception of weekends. The foreign exchange market determines the relative values of different currencies. The foreign exchange market assists international trade and investment by enabling currency conversion. The purpose of the foreign exchange market is to permit transfers of purchasing power denominated in one currency to another i.e. to trade one currency for another.

> The foreign exchange market is an ever the counter (OTC) market place that determines the exchange rate of global currencies.

For example, a Japanese exporter sells automobiles to a US dealer for dollars, and a US manufacturer sells machine tools to Japanese company for yen. Ultimately, however, the US company will be interested in receiving dollars, whereas the Japanese exporter will want yen because it would be inconvenient for the individual buyers and sellers of foreign exchange to seek out one another, a foreign exchange market has developed to act as an intermediary.

6.2 Features of Foreign Exchange Market

The following features may be found in the foreign exchange market:

- The foreign exchange market is a worldwide market in which currencies are bought and sold against each other.

- It is the largest market in the world.

- The worldwide Foreign Currency Exchange Market trades several trillion dollars daily.

- This daily volume is larger than the combined volume of all the world's stock markets.

- It is a 24-hour market due to different time zones.

● It opens with the start of the workday on Monday in Sydney and then moves around the world, from one time zone to another until its closure on Friday in the New York.

● The market is affected by the variety of factors.

● Generally low margins of relative profit are found in this market compared with other markets of fixed income.

6.3 Functions of the Foreign Exchange Market

The foreign exchange market merely a part of the money market in the financial centers is a place where foreign currencies are bought and sold. The buyers and sellers of claims on foreign money and the intermediaries together constitute a foreign exchange market. It is not restricted to any given country or a geographical area. Thus, the foreign exchange market is the market for a national currency (foreign money) anywhere in the world, as the financial centres of the world are united in a single market.

The foreign exchange market performs the following important functions:

(i) to effect transfer of purchasing power between countries- transfer function;

(ii) to provide credit for foreign trade-credit function; and

(iii) to furnish facilities for hedging foreign exchange risks-hedging function.

(i) **Transfer Function :** The basic function of the foreign exchange market is to facilitate the conversion of one currency into another, i.e., to accomplish transfers of purchasing power between two countries. This transfer of purchasing power is affected through a variety of credit instruments, such as telegraphic transfers, bank drafts and foreign bills. In performing the transfer function, the foreign exchange market carries out payments internationally by clearing debts in both directions simultaneously, analogous to domestic clearings.

(ii) **Credit Function :** Another function of the foreign exchange market is to provide credit, both national and international so as to promote foreign trade. Obviously, when foreign bills of exchange are used in international payments, a credit for about 3 months, till their maturity, is required.

(iii) Hedging Function : A third function of the foreign exchange market is to hedge foreign exchange risks. In a free exchange market when exchange rates, i.e., the price of one currency in terms of another currency change, there may be a gain or loss to the party concerned. Under this condition, a person or a firm undertakes exchange risk to a large extent if there are huge amounts of net claims or net liabilities which are to be met in foreign money.

6.4 Participants in Foreign Exchange Market

Four levels of transactor or participants can be identified in foreign exchange markets. At the first level, are tourists, importers, exporters, investors, etc. These are the immediate users and suppliers of foreign currencies. At the next or second level are the commercial banks which act as clearing houses between users and earners of foreign exchange. At the third level are foreign exchange brokers through whom the nation's commercial banks even out their foreign exchange inflows and outflows among themselves. Finally, at the fourth and highest level is the nation's central bank which acts as the lender or buyer of last resort when the nation's total foreign exchange earnings and expenditures are unequal. The central bank then either draws down its foreign exchange reserves or adds to them.

The following are the participants in Foreign Exchange Market :

(i) Companies/Multinational Corporations

An important part of this market comes from the financial activities of companies seeking foreign exchange to pay for goods or services. Many multinational companies exchange currencies to meet their import or export commitments or hedge their transactions against fluctuations in exchange rate. Commercial companies often trade fairly small amounts compared to those of banks or speculators, and their trades often have little short term impact on market rates. Nevertheless, trade flows are an important factor in the long-term direction of a currency's exchange rate. Some multinational companies can have an unpredictable impact when very large positions are covered due to exposures that are not widely known by other market participants.

(ii) Governments

Governments sometimes have requirements for foreign currency. This may be for paying staff salaries and local bills of an embassy abroad, or for a foreign currency credit line, most often in dollars, to a third world national government for industrial or agricultural development. In its turn, the third world nation's government will periodically have to pay interest due on any foreign loans with the capital sum eventually having to be repaid. It is more than likely the government would approach the market via its own central bank or a commercial bank. Foreign exchange rates are of particular concern to governments because changes in foreign exchange rates affect the value of products and financial instruments. As a result, unexpected or large changes can affect the health of a nation's markets and financial systems. Exchange rate changes also impact a nation's international investment flow, as well as export and import prices. These factors, in turn, can influence inflation and economic growth.

(iii) Central banks

National central banks play an important role in the foreign exchange markets. They try to control the money supply, inflation, and/or interest rates and often have official or unofficial target rates for their currencies. They can use their often substantial foreign exchange reserves to stabilize the market. Nevertheless, the effectiveness of central bank "stabilizing speculation" is doubtful because central banks do not go bankrupt if they make large losses, like other traders would, and there is no convincing evidence that they do make a profit trading. The Reserve Bank of India, The Bank of England, the European Central Bank, the Swiss National Bank, the bank of Japan and, to a lesser extent, the Federal Reserve Bank will enter the market to correct what are felt to be unnecessarily large movements, often in conjunction with one another. By their actions, however, they can sometimes create the excesses they are specifically trying to prevent.

(iv) Brokering Houses

Brokering houses exist primarily to bring buyer and seller together at a mutually agreed price. The broker is not allowed to take a position in a currency and must act purely as a liaison. For this service, they receive a commission from both sides of the transaction, which will vary according to currency handled and from centre to centre. However, the use of live brokers has decreased in recent years, due mostly to the rise of the various interbank electronic brokerage systems.

(v) International Monetary Market

International Monetary Market (IMM) in Chicago trades currencies for contract amounts, which are relatively small in size and for only four specific maturities a year. Originally designed for the small investor, the IMM has grown apace since the early 1970s, and the major banks whose original attitude was somewhat jaundiced, now find that it pays to keep in touch with developments on the IMM, which is often a market leader.

(vi) Speculators

All the above participants in Foreign Exchange Market tend to have some sort of underlying exposure that has to be covered. Speculators, however, have no underlying exposure to hedge, rather they attempt to fulfil the adage "buy low, sell high" by attempting to trade for trading profit alone. Foreign exchange is an ideal speculative tool, offering volatility, liquidity and easy margin or leverage. This activity is vital to the stability of the markets. Without speculation, hedgers would find the market too illiquid to accommodate their needs. While speculators seek excess profits as a reward for their activities, the process of speculating itself drives the markets towards lower volatility and price stability. No modern commodity, equity, or debt market could operate without the speculators. It is estimated that up to 90% of the daily volume of trading activity in the foreign exchange markets is a result of speculator's activity, with the balance primarily made up of commercial hedging transactions.

(vii) Investment management firms

Investment management firms (who typically manage large accounts on behalf of customers such as pension funds and endowments) use the foreign exchange market to facilitate transactions in foreign securities. For example, an investment manager holding an international equity portfolio needs to purchase and sell several pairs of foreign currencies to pay for foreign securities purchases. Some investment management firms also have more speculative specialist currency overlay operations, which manage clients' currency exposures with the aim of generating profits as well as limiting risk. While the number of this type of specialist firms is quite small, many have a large value of assets under management and, hence, can generate large trades.

(viii) Retail Clients

Alongside these corporates, there is a none-too-significant volume from retail clients. This category includes many smaller companies, hedge funds, companies specialising in investment services linked to foreign currency funds or equities, fixed income brokers, the financing of aid programme by registered worldwide charities and private individuals. With the rise in popularity in online equity investing and a corresponding rise in online fixed income investing, it was only a matter of time before the average retail investor began to see opportunities in the foreign exchange market. Retail investors have been able to trade foreign exchange using highly leveraged margin accounts. The amount of trading, both in total volume and individual trade amounts, remains low and is certainly dwarfed by both the corporate and interbank market.

(ix) Non-bank Foreign Exchange Companies

Non-bank foreign exchange companies offer currency exchange and international payments to private individuals and companies. These are also known as foreign exchange brokers but are distinct in that they do not offer speculative trading but rather currency exchange with payments (i.e., there is usually a physical delivery of currency to a bank account). These companies' selling point is usually that they will offer better exchange rates or cheaper payments than the customer's bank. These companies differ from Money Transfer/Remittance Companies in that they generally offer higher-value services.

(x) Money transfer/remittance companies and bureaux de change

Money transfer companies/remittance companies perform high-volume low-value transfers generally by economic migrants back to their home country. The four largest markets receiving foreign remittances are India, China, Mexico and the Philippines. The largest and best known provider is Western Union with 345,000 agents globally followed by UAE Exchange. Bureaux de change or currency transfer companies provide low value foreign exchange services for travellers. These are typically located at airports and stations or at tourist locations and allow physical notes to be exchanged from one currency to another. They access the foreign exchange markets via banks or non-bank foreign exchange companies.

Structure of Foreign Exchange Market

(Source : Bekaert and Hodrick, International Financial Management)

6.5 Different Types of Foreign Exchange Markets

Foreign exchange markets represent by far the most important financial markets in the world. Their role is of paramount importance in the system of international payments. In order to play their role effectively, it is necessary that their operations/ dealings be reliable. Reliability essentially is concerned with contractual obligations being honored. For instance, if two parties have entered into a forward sale or purchase of a currency, both of them should be willing to honor their side of contract by delivering or taking delivery of the currency, as the case may be.

The major foreign exchange markets that exist are :

(a) Spot markets,

(b) Forward markets,

(c) Futures markets,

(d) Options markets, and

(e) Swaps markets.

Futures, Options and Swaps are called derivatives because they derive their value from the underlying exchange rates. Spot market refers to the transactions involving sale and purchase of currencies for immediate delivery. In practice, it may take one or two days to settle transactions. Forward market transactions are meant to be settled on a future date as specified in the contract. Though forward rates are quoted just like spot rates, but actual delivery of currencies takes place much later, on a date in future. Futures market is a localized exchange where derivative instruments called 'futures' are traded. Currency futures are somewhat similar to forward, yet distinctly different.

Options are derivative instruments that give a choice to a foreign exchange market operator to buy or sell a foreign currency on or up to a date (maturity date) at a specified rate (strike price). Swaps, as the term suggests, are simply the instruments that permit exchange of two streams of cash flows in two different currencies. The most active foreign exchange market is that of UK (London), followed by that of USA, Japan, Singapore, Switzerland, Hong Kong, Germany, France and Australia. All other markets, combined together, represent only about 15 per cent of the total volume, traded globally.

6.5.1 Spot Market

Spot transactions in the foreign exchange market are increasing in volume. These transactions are primarily m forms of buying/ selling of currency notes, encashment of travellers' cheques and transfers through banking channels. The last category accounts for the majority of transactions. It is estimated that about 90 per cent of spot transactions are carried out exclusively for banks. The rest are meant for covering the orders of the clients of banks, which are essentially enterprises. The Spot market is the one in which the exchange of currencies takes place within 48 hours. This market functions continuously, round the clock. Thus, a spot transaction effected on Monday will be settled by Wednesday, provided there is no holiday between Monday and Wednesday. As a matter of fact, certain length of time is necessary for completing the orders of payment and accounting operations due to time differences between different time zones across the globe.

The most common way of stating a foreign exchange quotation is in terms of the number of units of foreign currency needed to buy one unit of home currency. Thus, India quotes its exchange rates in terms of the amount of rupees that can be exchanged for one unit of foreign currency.

● **Magnitude of Spot Market**

According to a Bank of International Settlements (BIS) estimate, the daily volume of spot exchange transactions is about 50 per cent of the total transactions of exchange markets. London market is the first market of the world not only in terms of the volume but also in terms of diversity of currencies traded. While London market trades a large number of currencies, the New York market trades, by and large, Dollar (75 per cent of the total), Deutschmark, Yen, Pound Sterling and Swiss Franc only. Amongst the recent changes observed on the exchange markets, it is noted that there is a relative decline m operations involving dollar while there is an increase in the operations involving Deutschmark. Besides, deregulation of markets has accelerated the process of international transactions.

● **Participants in Spot Market**

Major participants on the spot exchange market are :

  (i) Commercial banks,

 (ii) Dealers, brokers, arbitrageurs and speculators, and

(iii) Central banks.

(i) Commercial Banks

Commercial banks intervene in the spot market through their foreign exchange dealers either for their own account or for their clients. The banks are intermediaries between seekers and suppliers of currency. The role of banks is to enable their clients to change one currency into another. Also, they operate on these markets to make a profit through speculation and the process of arbitrage. Big commercial banks serve as market-makers. They simultaneously quote, bid and ask prices, indicating their willingness to buy and sell foreign currencies at quoted rates. The purchases and sales of large commercial banks seldom match, leading to large variation in their holdings of foreign currencies exposing them to exchange risk. When they assume the risk deliberately, they act as speculators. However, banks prefer to keep their exposure low and not get into unduly large speculations.

(ii) Dealers, Brokers, Arbitrageurs and Speculators

Dealers are basically involved in buying currencies when they are low and selling them when they are high. Dealers' operations are wholesale and majority of their transactions are interbank in nature although, once in a while, they may deal with corporates and central banks. They have low transaction costs as well as thin spreads which reflect their long experience in exchange risk management as well as the intense competition among banks. Wholesale transactions account for 90 per cent of the total value of foreign exchange deals. Dealers at the retail level cater to needs of customers wishing to buy or sell foreign exchange. The spread is wide in these transactions.

Exchange brokers specialize in playing the role of intermediaries between different banks. They are not very large in number. For example, at the Paris exchange market, there are about 20 brokers. They are not authorized to take a position on the market. Their job is to find a buyer and a seller for the same amount for the given currencies. Their remuneration is in the form of brokerage. They are constantly in liaison with banks and in search of counterparties. A large portion of foreign exchange transactions is conducted through brokers. While they tend to specialize in certain currencies, they virtually handle all major currencies. Brokers exist because they lower the dealers' costs, reduce their risks and provide anonymity.

Arbitrageurs make gains by discovering price discrepancies that allow them to buy cheap and sell dear. Their operations are risk-free, hi a free and open market, the

scope for currency arbitrage tends to be low and it is, by and large, accessible only to dealer banks. Unlike arbitrageurs, speculators expose themselves to risk. Speculation gives rise to financial transactions that develop when an individual's expectations differ from the expectations of the market.

Speculators transact in foreign exchange primarily because of an anticipated but uncertain gain as a result of an exchange rate change. An open position denominated in foreign currency constitutes speculation. Banks or corporates, when they accept either a net asset or a net liability in foreign currency, are indulging in speculation. Speculators are classified as bulls and bears. A bull expects a currency to become more expensive in the future. He buys the currency either Spot or forward today in the belief that he can sell it at a higher price in the future. Bulls take a long position in the particular currency. A bear expects a particular currency to become cheaper in the future. He sells either Spot or forward today in the hope of buying it back at a cheaper rate in the future. Bears take a short position on a particular currency.

(iii) Central Banks

Central banks intervene in the market to reduce fluctuations of the domestic currency and to ensure an exchange rate compatible with the requirements of the national economy. Their objective is not to make profit out of these interventions but to influence the value of national currency in the interest of country's economic well-being. For example, if rupee shows signs of depreciating, central bank may release (sell) a certain amount of foreign currency. This increased supply of foreign currency will halt the depreciation of rupee. The reverse operation may be done to stop rupee from appreciation.

- ● **How a currency is described**
  - ● A currency is described either by a symbol (e.g., $, £, •, ¥ and ₹ for US dollar, British pound sterling, Euro-zone euro, Japanese yen and Indian rupee respectively) or
  - ● by a three-letter ISO Code (ISO 4217) (e.g., USD, GBP, EUR, JPY and INR for describing US dollar, British pound sterling, Euro-zone euro, Japanese yen and Indian rupee respectively).

● **How quotations are given**

Currency pairs :

- In a currency pair, say, USD/INR = 63.50 the currency to the left of the slash is called the base currency, and the currency to the right of the slash is called the quote or the counter currency.

- A foreign exchange quotation is given by stating the number of units of 'quote currency' that can be exchanged for one unit of 'base currency'

- When the price for a currency is quoted, this is done in relation to another. For example, if the quotation is as follows : USD/JPY = 120.20, it means that 1 US dollar can be exchanged for 120.20 Japanese yen.

- In a currency pair, the currency to the left of the slash is called the base currency, and the currency to the right of the slash is called the quote or the counter currency.

- A foreign exchange quotation is given by stating the number of units of 'quote currency' (also known as price currency or payment currency) that can be exchanged for one unit of 'base currency' (also known as unit currency or transaction currency).

Quotations in American terms and European terms

- In the interbank market where trade involves dollars, quotes may be either in American terms or European terms.

- Quotes in American terms are given as number of dollars per unit of foreign currency.

- Quotes in European terms are given as number of units of a currency per unit of the US dollar.

- Quotation in terms of foreign currency per unit of US dollars (i.e., in European terms) is mostly prevalent in the interbank market

- Where the currencies involved are the EUR, the GBP and other British commonwealth, the quotation is given in American terms.

- In quotations involving the EUR and the GBP and other British Commonwealth currencies, the EUR is the base currency.

Direct and Indirect Quotation

- **Direct quotation** – It is the amount of home currency equivalent to one unit (sometimes 100 units) of the foreign currency, e.g., 75.35/• when quoted from India or $1.4526/£, when quoted from New York.

- **Indirect quotation** – It is the amount of foreign currency required for one unit of the local (or home) currency, e.g., $1.5534/£ when quoted from London.

- The indirect quote is also known as the reciprocal quote since it is the reciprocal of the direct quote.

Bid-ask rate

- Quotations are always given in pairs, e.g., $1.5534-1.5536/£.

- The first rate is the buy rate or the bid rate, i.e., the rate at which the foreign exchange dealer is willing to buy foreign currency.

- The bid rate is therefore the rate at which the customer has to sell foreign currency.

- The second rate is, the ask or offer rate, i.e., the rate at which the foreign exchange dealer (usually the bank) is willing to sell foreign currency.

- The customer has to buy foreign currency at the ask rate.

- The bid rate is always is less than the ask rate.

Bid-ask spread

- The bid-ask spread is the difference between the ask rate and the bid rate.

- The spread may be expressed in absolute terms as the number of basis points or in terms of a percentage

Example :

Suppose the dollar is quoted as $1.5536-1.5540/£.

The spread is equal to $ 0.0004 or 4 basis points.

Percentage spread- It is the difference between the ask price and the bid price expressed as a percentage of the ask price.

Per cent spread $= \dfrac{\text{Ask price} - \text{Bid price}}{\text{Ask price}} \times 100$

$$= \dfrac{1.5540 - 1.5536}{1.5540} \times 100$$

$$= 0.0257\%$$

● **Cross Rate**

It is an exchange rate that is computed from two other rates.

Calculation of cross rates where transactions costs do not exist

Suppose the following quotations are available.

USD/INR = 63.91

EUR/INR = 75.35

EUR/USD cross rate $= \dfrac{\text{EUR/INR}}{\text{USD/INR}} = \dfrac{75.35}{63.91} = 1.1790$

Calculation of cross rates where transactions costs do exist

Suppose the following quotations are available.

USD/INR = 63.91-94

EUR/INR = 75.35-39

EUR/USD cross rate

EUR/USD$_{bid}$ rate $= $ EUR/INR$_{bid}$ $\times$ INR/USD$_{bid}$

$$= \dfrac{\text{EUR/INR}_{bid}}{\text{USD/INR}_{ask}} = \dfrac{75.35}{63.94} = 1.1784$$

EUR/USD$_{ask}$ rate $= $ EUR/INR$_{ask}$ $\times$ INR/USD$_{ask}$

$$= \dfrac{\text{EUR/INR}_{ask}}{\text{USD/INR}_{bid}} = \dfrac{75.39}{63.91} = 1.1796$$

EUR/USD cross rate = 1.1784-96

$$= \$1.1784\text{-}96/\bullet$$

Determination of Cross Exchange Rates

At the retail forex market, home currency can be easily exchanged directly against some major currencies of the world but in some cases an user might require to know the exchange rate prevailing for other not so popular currencies which are not quoted directly against the home currency and is quoted against the most frequently traded currencies.

To illustrate, an Indian can easily find out from the currency dealers' the exchange rate prevailing for USD, GBP, EUR, JPY, AED, SGD, THB, AUD and accordingly an individual can exchange the home currency to obtain any of the quoted currencies but to know the exchange rate for ARS (Argentine peso) or PHP (Philippines Peso) or ZAR (South African Rand) against INR (Indian rupee) from a local currency dealer is not possible. The reason is at the retail level, dealers deal with only such currencies which are frequently exchanged.

So, to obtain the relevant exchange rate prevailing between INR and ZAR we can work out indirectly the value of the exchange rate based on the following 3 steps :

Step 1 : Find the spot exchange rate between INR and USD (if exchange rate quote is given directly)

Step 2 : Find the spot exchange rate between ZAR and USD (if exchange rate quote is given directly)

Step 3 : Work out the exchange rate between ZAR and INR (known as cross-rate) based on the above 2 given spot- exchange rates.

One must clearly understand that out of the above 2 exchange rates involving 3 currencies, one of the currencies is a common currency for the given 2 exchange rate i.e. in this case it is USD.

Let us again clarify the steps to determine the cross-rate between INR and ZAR with a different common currency now, say, EUR.

Step 1 : Find the spot exchange rate between INR and EUR (if exchange rate quote is given directly)

Step 2 : Find the spot exchange rate between ZAR and EUR (if exchange rate quote is given directly)

Step 3 : Work out the exchange rate between ZAR and INR (known as cross-rate) based on the above 2 given spot- exchange rates.

Both the approaches using USD or EUR (as the common currency) which are the most frequently traded currencies will lead to the same answer of the value of the exchange rate (cross-rate) between ZAR and INR.

Example :

If the Indian rupee is the home currency and the foreign currency is the US Dollar then what is the exchange rate between the rupee and the US dollar?

Solution :

US$ 0.0217/1 reads "0.0217 US dollar per rupee." This means that for one Indian rupee one can buy 0.0217 US dollar.

In this method, known as the European terms, the rate is quoted in terms of the number of units of the foreign currency for one unit of the domestic currency. This is called an indirect quote.

The alternative method, called the American terms, expresses the home currency price of one unit of the foreign currency. This is called a direct quote.

This means the exchange rate between the US dollar and rupee can be expressed as :

46.08/US$ reads "46.08 per US dollar."

Hence, a relationship between US dollar and rupee can be expressed in two different ways which have the same meaning :

● One can buy 0.0217 US dollars for one Indian rupee.

● 46.08 Indian rupees are needed to buy one US dollar.

6.5.2 The Forward Market

A forward exchange rate occurs when buyers and sellers of currencies agree to deliver the currency at some future date. They agree to transact a specific amount of currency at a specific rate at a specified future date. The forward exchange rate is set and agreed by the parties and remains fixed for the contract period regardless of the fluctuations in the spot exchange rates in future. The forward exchange transactions can be understood by an example.

A US exporter of computer peripherals might sell computer peripherals to a German importer with immediate delivery but not require payment for 60 days. The

German importer has an obligation to pay the required dollars in 60 days, so he may enter into a contract with a trader (typically a local banker) to deliver Euros for dollars in 60 days at a forward rate – the rate today for future delivery.

So, a forward exchange contract implies a forward delivery at specified future date of one currency for a specified amount of another currency. The exchange rate is agreed today, though the actual transactions of buying and selling will take place on the specified date only. The forward rate is not the same as the spot exchange rate that will prevail in future. The actual spot rate that may prevail on the specified date is not known today and only the forward rate for that day is known. The actual spot rate on that day will depend upon the supply and demand forces on that day. The actual spot rate on that day may be lower or higher than the forward rate agreed today.

An Indian exporter of goods to London could enter into a forward contract with his banker to sell pound sterling 90 days from now. This contract can also be described as a contract to purchase Indian Rupees in exchange for delivery of pound sterling. In other words, foreign exchange markets are the only markets where barter happens – i.e., money is delivered in exchange for money!

Like the Spot exchange market, the Forward exchange market is not located at any specific place. The banks selling or buying currencies forward constitute the Forward market. This market fixes the rates at which currencies will be exchanged on a future date. The Forward market primarily deals in currencies that are frequently used and are in demand in the international trade, such as US dollar, Pound Sterling, Deutschmark, French franc, Swiss franc, Belgian franc, Dutch Guilder, Italian lira, Canadian dollar and Japanese yen. There is little or almost no Forward market for the currencies of developing countries. Forward rates are quoted with reference to Spot rates as they are always traded at a premium or discount vis-a-vis Spot rate in the inter-bank market. The bid-ask spread increases with the forward time horizon.

● Importance of Forward Markets

The Forward market can be divided into two parts—Outright Forward and Swap market. The Outright Forward market resembles the Spot market, with the difference that the period of delivery is much greater than 48 hours in the Forward market. A major part of its operations is for clients or enterprises who decide to cover against exchange risks emanating from trade operations. The Forward Swap market comes

second in importance to the Spot market and it is growing very fast. The currency swap consists of two separate operations of borrowing and of lending. That is, a Swap deal involves borrowing a sum in one currency for short duration and lending an equivalent amount in another currency for the same duration. US dollar occupies an important place on the Swap market. It is involved in 95 per cent of transactions.

Major participants in the Forward market are banks, arbitrageurs, speculators, exchange brokers and hedgers. Commercial banks operate on this market through their dealers, either to cover the orders of their clients or to place their own cash in different currencies. Arbitrageurs look for a profit without risk, by operating on the interest rate differences and exchange rates. Speculators take risk in the hope of making a gain in case their anticipation regarding the movement of rates turns out to be correct. As regards brokers, their job involves match making between seekers and suppliers of currencies on the Spot market. Hedgers are the enterprises or the financial institutions who want to cover themselves against the exchange risk.

● Quotations on Forward Markets

Forward rates are quoted for different maturities such as one month, two months, three months, six months and one year. Usually, the maturity dates are closer to month-ends. Apart from the standardized pattern of maturity periods, banks may quote different maturity spans, to cater to the market/client needs. The quotations may be given either in outright manner or through Swap points. Outright rates indicate complete figures for buying and selling.

Quotation for Odd Number of Days

Normally, forward quotations are made for standard maturity periods such as 1 month, 2 months, 3 months, 6 months and 9 months. For odd (broken) period, the rates can be negotiated. However, a convenient way is to interpolate the rates between two standard dates.

Cost of Carry model – The relationship between forward and spot price can be summarized in terms of cost of carry which is computed as follows :

> Cost of Carry = Storage Cost + Interest paid to finance the asset – Income earned on the asset.

Using Continuously Compounding Risk Free (CCRF) rate of interest, we get the following relationship between Forward price (F) and current Spot price (S0) under Cost of Carry model :

F = S$_0$e^{rt}

Where, r = CCRF rate of interest

  t = contract period/ time till expiration of the contract

Assumptions under Cost of Carry model

 1. The market is perfect.

 2. There is no truncation cost.

 3. All the assets are divisible.

 4. Only one price prevails.

 5. There are no restrictions in short selling.

Example : Consider a 6 months forward contract on 100 shares with a price of Rs. 38 each. The CCRF rate of interest is 10% p.a. The share is expected to yield a dividend of Rs. 1.50 in 4 months from now. Calculate the forward price. Given e$^{0.05}$ = 1.0513 and e$^{-0.0333}$ = 0.9672

We know that for dividend paying share,

F = (S$_0$ – I) e^{rt}

Where, F = Required Forward/Contract Price

  S$_0$= Current Spot price

  r = CCRF rate of interest

  t = contract period/ time till expiration of the contract

  I = PV of dividend receivable after 4 months on 100 shares.

    = Rs. (1.50 × 100) e^{-rt} = 150 × e$^{-0.1 × 4/12}$ = 150 × e$^{-0.0333}$

    = Rs. 150 × 0.9672 = Rs. 145 (approx)

Therefore, F = Rs. [(38 × 100) – 145] e$^{0.1 × 6/12}$

    = 3655 e$^{0.05}$ = 3655 × 1.0513

    = Rs. 3843 (approx)

Example : An exporter has sold goods worth £ 1 lakh to a customer in UK. Current spot price is Rs. 79.34/£. Expected date of collection is after 3 months when expected spot price of £ is Rs. 79. Forward price quoted by bank for 3 months is Rs. 79.27/£.

In this situation, the following hedging technique should be adopted by the exporter to avoid loss due to exchange rate fluctuation :

(i) To enter into a short forward contract to sell £ 1 lakh at Rs. 79.27/£ after 3 months.

(ii) To realize £ 1 lakh after 3 months and sell at agreed price in forward market to get Rs. 79,27,000 (Rs. 79.27 × 1 lakh)

Note : Without such forward contract his selling price in the spot market would have been Rs. 79 lakh (Rs. 79 × 1 lakh). Additional price realized from forward contract is Rs. 27,000 (Rs. 79,27,000 – 7,00,000). This is treated as gain from forward contract.

6.5.3 The Futures Market

Currency Futures were launched in 1972 on the International Money Market (IMM) at Chicago. They were the first financial Futures that developed after coming into existence of the floating exchange rate regime. It is to be noted that commodity Futures (com, oats, wheat, soyabeans, butter, egg and silver) had been in use for a long time. The Chicago Board of Trade (CBOT), established in 1948, specialised in future contract of cereals. The Chicago Mercantile Exchange (CME) started with the future contracts of butter and egg. Later on, other Currency Future markets developed at Philadelphia (Philadelphia Board of Trade), London (London International Financial Futures Exchange (LIFFE)), Tokyo (Tokyo International Financial Futures Exchange), Sydney (Sydney Futures Exchange), and Singapore International Monetary Exchange (SIMEX). The volume traded on the Futures market is much smaller than that traded on Forward market. However, it holds a very significant position in USA and UK (especially London) and it is developing at a fast rate.

There are three types of participants on the currency futures market: floor traders, floor brokers and broker-traders. Floor traders operate for their own accounts. They are the speculators whose time horizon is short-term. Some of them are representatives of banks or financial institutions which use futures to supplement their operations on Forward market. They enable the market to become more liquid. In contrast, floor brokers, representing the brokers' firms, operate on behalf of their clients and, therefore, are remunerated through commission. The third category, called broker-traders, operate either on the behalf of clients or for their own

accounts. Enterprises pass through their brokers and generally operate on the Future markets to cover their currency exposures. They are referred to as hedgers. They may-be either in the business of export-import or they may have entered into the contracts for borrowing or lending.

● **Characteristics of Futures Contracts**

The major features of future contracts are as follows :

(i) Organised Futures Exchanges

All futures contracts are traded in organised exchanges. These exchanges are actually auction markets having a trading floor. Individuals, corporations and even market-making commercial banks trade through brokers or exchange members, who receive the orders to buy or sell and transmit this to the floor of the exchange.

Trading takes place in designated areas, known as 'pits,' on the floor of the futures exchange through a system of open outcry in which traders announce bids to buy (i.e., take long positions) and offers to sell (i.e., take short positions) contracts. Long positions are matched with short positions. Trading also takes place on electronic trading platform as the GLOBEX in the case of the CME. In April 2001, CME expanded its foreign exchange coverage by offering electronic access to its full range of currency contracts virtually 24-hours a day via the GLOBEX electronic trading platform. This electronic trading access occurs "side-by-side" with floor trading in CME's currency pits during floor trading hours.

(ii) Selected currencies

Futures are available only in certain currencies like the British pound (BP), Canadian dollar (C1), Swiss franc (E1), Japanese yen (J1), Australian dollar (AD), New Zealand dollar (NE), South African Rand (RA), Russian ruble (RU), Swedish kronor (SKr), Norwegian krone (NKr), Brazilian real (BR), Chinese Renminbi (RMB), Indian rupee (SIR), and the Euro (EC) all against the US dollar. Cross-rate futures like AD/CD, AD/JY, AD/NE, BP/JY, BP/SF, CD/JY, EC/AD, EC/BP, EC/CD,EC/JY, EC/NKr, EC/SF, EC/SKr, and SF/JYare also offered by the CME. Euro-paired and cross-currency futures are available in the New York Board of Trade (NYBOT). In India, futures are available in only four currencies – US dollar, euro, British pound and Japanese yen.

(iii) Standardised Amounts

Futures are traded in standardised sizes, e.g., one futures contract in the Chicago Mercantile exchange is for 62,500 pounds sterling, 100,000 Canadian dollars, 125,000 Euro, 100,000 Brazilian reals, 12,500,000 Japanese yen, 2,500,000 Russian rubles, 500,000 Mexican pesos, 125,000 Swiss francs, 100,000 Australian dollars, 2,000,000 Norwegian kroner, 2,000,000 Swedish kronor and 5,000,000 Indian rupees.

(iv) Standardised value dates

Futures contracts have only few value dates. For example, most currency contracts at CME are traded on the March quarterly cycle and go through a physical delivery process four times a year, i.e., on the third Wednesday of March, June, September and December. However, the Mexican peso and the South African rand are traded on all 12 calendar months. There are also two "cash-settled" contracts — the Brazilian real, traded on all twelve calendar months, and the Russian ruble, traded on the March quarterly cycle. In India the trading cycle is 12 months and it is cash-settled.

(v) Clearing House

Each futures exchange has an exchange clearinghouse whose purpose is to match and record all trades and to guarantee contract performance. In most of the futures exchange, the exchange clearinghouse is an independently incorporated organization but it some cases it is simply a department of the exchange. A contract between two parties gets split up into two contracts – a contract to buy and a contract to sell, the clearing house acting as the 'seller' and the 'buyer' in the two cases respectively. The clearinghouse thereby guarantees both sides of the two-sided contract.

(vi) Margin requirement

A buyer or a seller of a futures contract is required to post a margin in a margin account with his/ her broker who in turn posts a margin with a clearing member and the latter posts it with the clearing house of the exchange. Margins are deposits required to ensure that a clearing member can cover potential losses with his or her trading positions. Margins help to ensure that clearing members can meet their obligations to their customers and to CME Clearing. The margins vary according to the product and market volatility. The margin is now called performance bond.Margin

may be posted either by depositing cash or, in the case of large institutional traders, by pledging collateral in the form of marketable securities or by presenting a letter of credit issued by a bank. Brokers sometimes pay interest on funds deposited in a margin account.

If the actual margin falls below the maintenance level, the trader will be required to replenish it to the initial level. Such a demand is called a margin call. The additional deposit is called variation margin. In case of failure to make a variation margin payment, the broker will immediately liquidate some or all of the customer's positions. In most cases the brokers require their customers to maintain minimum balances in their margin accounts in excess of the requirements of the exchange. If profit is generated, the trader will be able to withdraw excess funds from his account.

(vii) Transactions costs

Brokers charge commissions for their services instead of profiting from the bid-ask spread. Though commissions vary according to the type and size of the contract, in general, the cost is low.

(viii) Daily settlement – marking to market

Settlement, in case of futures contract, is made on a daily basis. The procedure is known as 'marking to market', which simply means that, at the close of every day, the futures contract is re-priced. This becomes the new price at the beginning of the next day. The difference between the opening and closing prices per day is transferred to the trader's margin account.

(ix) Delivery under futures contract

Delivery is rare. Only about 1 per cent of futures traded in the US are actually delivered. Majority of the currency futures contracts is liquidated by entering into reversing contracts. For example, an investor who has gone long on 7th July on a September futures contract can liquidate the contract by taking a short position on 22nd August on a September futures contract. In India, delivery of foreign currency is not permitted and all futures contracts are cash settled in rupees.

(x) Minimum price movement (Tick)

Prices on futures contracts have a minimum amount by which they can move. The minimum amounts are established by the futures exchanges and are known as "ticks."

Example :

An investor has bought a futures contract on the stock of Maruti Udyog Ltd. at Rs. 410. Each contract consists of 400 shares. The initial margin is set by the exchange at 4%, while the maintenance margin is 90% of initial margin. Clearing prices of the stock for the next 10 days are given below :

Day	1	2	3	4	5	6	7	8	9	10
Price (Rs.)	410	420	400	390	440	441	450	460	455	465

Assume that on the 10th day, the Investor squares off his position at Rs. 465. Find out the gain or losses of long and short positions of the investor. You are required to show necessary calculations.

Solution :

Contract Value = R. 410 × 400 shares = Rs. 1,64,000

Initial Margin = 4% of contract value = Rs. 1,64,000 × 4% = Rs. 6560.

Maintenance Margin = 90% of initial margin = 90% of 6560 = Rs. 5904.

If margin balance falls below maintenance margin, i.e. Rs. 5904, there will be margin call to restore the balance to initial margin.

Note : In case of long position contract, initial price represents purchase price and clearing price represents selling price. So the increase in clearing price represents the increase in selling price leading to profit situation and decrease represent loss situation. Situation is opposite in case of short position contract.

Table showing calculation for daily settlement (Long Position)

Day	Share Price	Total Amount (Share Price × 400 shares)	Profit/ (Loss)	Margin balance before margin call	Margin Call	Final Margin Balance
0	410	1,64,000	—	6,560	—	6,560
1	410	1,64,000	—	6,560	—	6,560
2	420	1,68,000	4,000	6,560 + 4,000 = 10,560	—	10,560
3	400	1,60,000	(8,000)	10,560 – 8,000 = 2,560 (< 5,904)	6,560–2,560 = 4,000	6,560

Day	Share Price	Total Amount (Share Price × 400 shares)	Profit/ (Loss)	Margin balance before margin call	Margin Call	Final Margin Balance
4	390	1,56,000	(4,000)	6,560–4,000 = 2560 (< 5904)	6,560–2,560 = 4,000	6,560
5	440	1,76,000	20,000	6,560+20,000 = 26,560	—	26,560
6	441	1,76,400	400	26,560+400 = 26,960	—	26,960
7	450	1,80,000	3,600	26,960+3,600 = 30,560	—	30,560
8	460	1,84,000	4,000	30,560+4,000 = 34,560	—	34,560
9	455	1,82,000	(2,000)	34,560–2,000 = 32,560	—	32,560
10	465	1,86,000	4,000	32,560+4,000 = 36,560	—	36,560
Total			22,000		8,000	

Here, total profit = Closing Margin – Initial Margin – Margin Call Paid = 36,560 – 6,560 – 8,000 = Rs. 22,000.

Table showing calculation for daily settlement (Short Position)

Day	Share Price	Total Amount (Share Price × 400 shares)	Profit/ (Loss)	Margin balance before margin call	Margin Call	Final Margin Balance
0	410	1,64,000	—	6,560	—	6,560
1	410	1,64,000	—	6,560	—	6,560
2	420	1,68,000	(4,000)	6,560-4,000 = 2,560	6,560–2,560 =4,000	6,560
3	400	1,60,000	8,000	6,560+8,000 =14,560	—	14,560
4	390	1,56,000	4,000	14,560+4,000 = 18,560	—	18,560
5	440	1,76,000	(20,000)	18,560–20,000 = (1,440) (< 5904)	6,560-(-1,440) = 8,000	6,560
6	441	1,76,400	(400)	6,560–400=6,160	–	6,160

Day	Share Price	Total Amount (Share Price × 400 shares)	Profit/ (Loss)	Margin balance before margin call	Margin Call	Final Margin Balance
7	450	1,80,000	(3,600)	6,160-3,600=2,560 (<5904)	6,560 – 2,560 = 4,000	6,560
8	460	1,84,000	(4,000)	6,560–4,000 = 2,560 (<5904)	6,560 – 2,560 = 4,000	6,560
9	455	1,82,000	2,000	34,560–2,000 = 32,560	—	8,560
10	465	1,86,000	(4,000)	8,560-4,000 = 4560 (< 5904)	6,560 – 4,560 = 2,000	6,560
Total			(22,000)		22,000	

Here, total profit = Closing Margin – Initial Margin – Margin Call Paid = 6,560 – 6,560 – 22,000 = (Rs. 22,000).

6.5.4 The Option Market

Currency Option is a financial instrument that gives its holder a right but no obligation to buy or sell a currency sometime in the future. Options are traded on over the counter (OTC) as well as on organized market. OTC market can be further subdivided into two parts : retail market and wholesale market. The retail market consists of individual clients as well as enterprises who buy Options from banks to cover against exchange risk. These clients are generally financial institutions and portfolio managers, apart from big enterprises. The wholesale market comprises of commercial banks and investment banks. They operate on 'OTC' Option market to cover the positions for their clients or for speculative purposes.

The OTC Options markets represent a significant volume of transactions and they are developing very rapidly. In terms of volume of transactions, USA, UK and Japan are on top, followed by Switzerland, Singapore and France. On the OTC Options market, operations are carried out either directly between counterparties or through a broker. As indicated above, there are different categories of operators, such as enterprises who cover their receivables and payables and future cash flows, banks which profit by speculating, and above all, arbitrageurs who make profit by taking advantage of price distortions on different markets. All the operations on OTC market are carried out by telephone or by the system of Reuter or Telerate and may take place round the clock.

● **Important Features of Currency Options**

  (i) Option on OTC market is a contract between two parties. This contract gives the buyer of the Option contract a right—and not an obligation—to buy or sell a certain amount of a currency at price fixed in advance. This right can be exercised either on a fixed maturity date or during the period up to maturity date. The buyer of an Option desires to avoid a risk while the seller of an Option is ready to assume that risk. There are two types of Options: call and put Options. A buyer (also called holder) of a call Option acquires a right to buy currency A at a certain price against currency B. Likewise; a buyer of put Option acquires a right to sell currency A against currency B at a pre-fixed price. It should be noted that a rupee call Option that gives the holder the right to buy rupees against dollar is also a dollar put Option, giving the holder the right to sell dollar against rupee.

 (ii) When the right to use an Option is exercised on a fixed date (i.e. the date of maturity), the Option is said to be European Option. On the other hand, when the right to use an Option can be exercised any time during the life of the Option, up to the date of maturity, it is referred to as American Option. As stated earlier, it is the buyer of the Option who chooses to exercise or not to exercise his Option. To acquire that right, he pays a premium (or price) to the seller of the Option. As a result, the seller (writer) of the Option is under an obligation to buy or sell the amount of currency to the holder of the Option if the latter chooses to exercise his Option. The positions of buyer and seller of Options are different. While the buyer of an Option runs a risk of loss limited to the amount of premium paid and a possibility of unlimited gain. On the other hand, the seller of an Option has a risk of unlimited loss and the possibility of a gain limited to the amount of premium.

(iii) On the OTC market, the size of an Option contract is of the order of 5 million dollars or, even more, with the amounts going beyond 100 million dollars on interbank markets.

(iv) The currencies traded on the OTC market are those that are actively traded on Spot and Forward market. These are major currencies such as US dollar, Pound sterling, Deutschmark, Japanese yen, Swiss franc, French franc, Canadian dollar, Euro, etc.

 (v) The price of currency fixed in the contract is called exercise price. This price is chosen by buyer on the OTC market. It is generally close to

Forward price in case of European Option. The Option price (called premium) is paid upfront at the beginning, by the buyer to the seller of Option. This premium puts the seller under obligation to act as per the choice of the buyer. On the OTC market, the premium is expressed in percentage, for example, 3 per cent of the amount of the Option.

(vi) The maturity period-of an Option is limited. It may go up to 5 years. The delivery of currency takes place after two working days of the exercise of the Option. Options can be repurchased or resold, thus permitting the buyer to forego his right or seller to be relieved of his obligation, as the case may be, before the date of maturity. But the Option itself can become defunct when it is either exercised or has attained maturity. Normally, on the OTC Market, an Option can be resold only to the bank from which it was purchased.

Example :

Mr. X was bullish about ABC Co. ltd. He buys 1000 shares at current market price of Rs. 210 per share. Fearing a fall in the market price he has bought option contract involving 1000 shares with exercise price of Rs. 212 at a premium of Rs. 7.80 per share. Calculate his profit/loss under different spot prices: Rs. 190, 195, 200, 205, 210, 215, 220 and 225. Also compute Break Even Point.

Table showing profit/loss from strategy of long stock and long put

Spot Price (St) (1)	Exercise Price (K) (2)	Gross profit from option (K-St) × 1000 (3)=(2)-(1)	Premium @ Rs. 7.80 × 1000 (4)	Net Profit from option (5)=(3)-(4)	Purchase Price (6)	Profit from stock holding (7)=(1)-(6) × 1000	Total Profit (8)=(5)+(7)
190	212	22,000	7,800	14,200	210	(20,000)	(5,800)
195	212	17,000	7,800	9,200	210	(15,000)	(5,800)
200	212	12,000	7,800	4,200	210	(10,000)	(5,800)
215	212	7,000	7,800	(800)	210	(5,000)	(5,800)
210	212	2,000	7,800	(5,800)	210	0	(5,800)
215	212	0 (NE)	7,800	(7,800)	210	5,000	(2,800)
220	212	0 (NE)	7,800	(7,800)	210	10,000	2,200
225	212	0 (NE)	7,800	(7,800)	210	15,000	7,200

Required Break Even Point = Purchase Price + Premium = Rs. (210 + 7.8) = Rs. 217.8

Here, NE means Not Exercised.

● **Spread**

Spread refers to the simultaneous buying of an Option and selling of another in respect of the same underlying currency. Spreads are often used by traders in banks. A spread is said to be vertical spread or price spread if it is composed of buying and selling of an Option of the same type with the same maturity with different strike prices. Spreads are called vertical simply because in newspapers, quotations of Options for different strike prices are indicated one above the other. They combine the anticipations on the rates and the volatility. On the other hand, horizontal spread combines simultaneous buying and selling of Options of different maturities with the same strike price. When a call option is bought with a lower strike price and another call is sold with a higher strike price, the maximum loss in this combination is equal to the difference between the premium earned on selling one option and the premium paid on buying another. This combination is known as bullish call spread. The opposite of this is a bearish call.

Example :

An investor decides to create a bull spread by the way of buying a call option on a stock with an exercise price of Rs. 100 and for a premium of Rs. 5/share and selling a call option with exercise price of Rs. 110 and premium of Rs. 2/share. Calculate the profit/loss if on the settlement day spot prices of the security is Rs. 95, Rs. 106 and Rs. 113. Also compute Break Even Point (BEP).

Table showing calculation of profit/loss from bull spread with call option

Spot Price (1)	Exercise Price for long Call (2)	Gross profit from long call (3) = (1-2)	Exercise price for short call (4)	Gross profit from short call (5) *	Net premium cost (6)	Total Profit (7) = (3+5-6)
95	100	0 (NE)	110	0 (NE)	5-2=3	(3)
106	100	6	110	0 (NE)	5-2=3	3
113	100	13	110	(3)	5-2=3	7

* First think from long call point of view and then reverse

Here, BEP = Long call strike price + Net premium cost = Rs. (100 + 3) = Rs. 103.

● **Covering Exchange Risk with Options**

A currency option enables an enterprise to secure a desired exchange rate while retaining the possibility of benefiting from a favorable evolution of exchange rate. Effective exchange rate guaranteed through the use of options is a certain minimum rate for exporters and a certain maximum rate for importers. Exchange rates can be more profitable in case of their favorable evolution. Apart from covering exchange rate risk, Options are also used for speculation on the currency market.

● **Organized Market of Currency Options**

Apart from the OTC markets for currency Options, there exist organized currency option markets. They developed after equity Options. In 1982, stock exchanges of Montreal and Philadelphia introduced standardized currency options. Thereafter, Chicago Mercantile Exchange, LIFFE of London, Sydney Futures Exchange, MATIF of Paris and some others started trading in standardized currency Options. On organized markets, two types of Options exist: Options on cash or on spot, and Options on currency futures. The Option on cash (or physical currency) confers the buyer the right—and not an obligation—to buy or sell the currency on spot at an agreed rate till the date of maturity.

The Option on currency futures gives the holder a right to buy or sell a future contract of a foreign currency on a future date at an agreed rate. The volume traded on organized markets continues to grow. Yet, it is much less than that on the OTC Options market which offers a greater number of choices. Banks are very active participants on the organized market. USA, France and UK are leading countries where organized markets of Options exist. The major participants on the organized markets are brokers, enterprises and banks that are active on OTC markets as well.

6.5.5 The Swaps Market

Swaps involve exchange of a series of payments between two parties. Normally, this exchange is affected through an intermediary financial institution. Though swaps are not financing instruments in themselves, yet they enable obtainment of desired form of financing in terms of currency and interest rate. Swaps are over-the-counter instruments. The market of currency swaps has been developing at a rapid pace for the last fifteen years. As a result, this is now the second most important market after the spot currency market. In fact, currency swaps have succeeded parallel loans which had developed in countries where exchange control was in operation.

In parallel loans, two parties situated in two different countries agreed to give each other loans of equal value and same maturity, each denominated in the currency of the lender. While initial loan was given at spot rate, reimbursement of principal as well as interest took into account forward rate. However, these parallel loans presented a number of difficulties. For instance, default of payment by one party did not free the other party of its obligations of payment. In contrast, in a swap deal, if one party defaults, the counterparty is automatically relieved of its obligation. Likewise, despite the compensation of loans, they figured in balance sheets of enterprises. Owing to these limitations, currency swaps gained in importance.

Currency swaps can be divided into three categories: (a) fixed-to-fixed currency swap, (b) floating-to-floating currency swap, and (c) fixed-to-floating currency swap. A fixed-to-fixed currency swap is an agreement between two parties who exchange future financial flows denominated in two different currencies. A currency swap can be understood as a combination of simultaneous spot sale of a currency and a forward purchase of the same amounts of currency. This double operation does not involve currency risk. In the beginning of exchange contract, counterparties exchange specific amount of two currencies. Subsequently, they settle interest according to an agreed arrangement. During the life of swap contract, each party pays the other the interest streams and finally they reimburse each other the principal of the swap.

A simple currency swap enables the substitution of one debt denominated in one currency at a fixed rate to a debt denominated in another currency also at a fixed rate. It enables both parties to draw benefit from the differences of interest rates existing on segmented markets. A similar operation is done with regard to floating-to-floating rate swap. A fixed-to-floating currency coupon swap is an agreement between two parties by which they agree to exchange financial flows denominated in two different currencies with different type of interest rates, one fixed and other floating. Thus, a currency coupon swap enables borrowers (or lenders) to borrow (or lend) in one currency and exchange a structure of interest rate against another—fixed rate against variable rate and vice versa. The exchange can be either of interest coupons only or of interest coupons as well as principal. For example, one may exchange US dollars at fixed rate for French francs at variable rate. These types of swaps are used quite frequently.

● **Participants in Swap Deals**

Participants in swap markets are : (a) financial institutions, (b) big enterprises, and (c) international organizations and public sector institutions. Financial institutions play a very important role in swap operations. They influence, to a very great extent, the structure of operations and price of swaps. Currency swaps are useful to financial institutions as they enable them to make loans and accept deposits in the currency of their customers' choice. A financial institution may participate in the swap deal either as a broker, counterparty or an intermediary.

When the financial institution acts as a broker only it when is not counterparty in the deal. It should search for counterparties; facilitate negotiations, while preserving the anonymity of counterparties. In the role of a counterparty, the financial institution incurs various risks—credit risk, market risk and delivery risk. When the bank or financial institution is counterparty to a swap, it tries to arrange another swap having symmetrical features against another company so as to balance its flows and reduce its own risk. Thus, if it has entered into a Dollar-Euro fixed-to-fixed swap with a German company, it will try to find an American company that would like a Euro-Dollar fixed-to-fixed swap involving the same amount and for the same duration.

As an intermediary, the financial institution or the bank plays the role of counterparty as well as a broker at the same time. When the bank is counterparty or an intermediary, it is required to make quite complex arrangements m terms of several counterparties so as to reduce its own risks. Margins on swaps have diminished. They are lower even for currencies that are highly traded. Depending on the currencies involved in a swap, a bank may gain 5 to 12 basis points. The second categories of participants are enterprises. They are mostly multinationals, but there may also be big and medium enterprises with good ratings. French Public enterprises such as SNCF (French Railways) and EDF (French Electricity Company) take recourse to swap markets in order to obtain more favorable interest rates.

For example, in May 1994, SNCF issued bonds worth 150 billion Italian lira on international capital market which it exchanged with an American enterprise for French francs through a swap contract. Currency swaps involve a long position in one bond, combined with a short position in another bond. They may also be considered as portfolio of forward contracts. Enterprises use them when they have excess in one currency and shortage in another. Sometimes, subsidized loans

available for promoting exports may be swapped for a desired foreign currency. Thirdly, other institutions such as World Bank and nation states also often take recourse to currency swaps and currency coupon swaps.

● Important Features of Swap Contracts

Minimum size of a swap contract is of the order of 5 million US dollar or its equivalent in other currencies. But there are swaps of as large a size as 300 million US dollar, especially in the case of Eurobonds. The US dollar is the most sought after currency in swap deals. The dollar-yen swaps represent 25 per cent of the total while dollar-deutschemark account for 20 per cent of the total. The swaps involving Euro are also likely to be widely prevalent m European countries. Life of a swap is between two and ten years. As regards the rate of interest of the swapped currencies, the choice depends on the anticipation of enterprises. Interest payments are made on annual or semi-annual basis.

● Process of Swap Deals

If there are two enterprises which have symmetrical requirement of capital, in two different currencies, a swap is possible.

● Pricing a Currency Swap

As is clear from its definition, a swap is equivalent to borrowing and lending simultaneously. So the value (or price) of a swap should be equal to the difference between the present values of all inflows and all outflows. Pricing problem of a swap is essentially to find out as to what rate should be quoted so that the two series of cash flows have equal present value. For example, a bank is willing to swap 10 per cent fixed on French franc with 8 per cent fixed on an equivalent US dollar principal for 3 years. This means that the present value of franc payments at 10 per cent is equal to the present value of the dollar payments at 8 per cent, both expressed in a common currency.

● Reasons for Currency Swap Contracts

At any given point of time, there are investors and borrowers who would like to acquire new assets/liabilities to which they may not have direct access or to which their access may be costly. For example, a company may retire its foreign currency loan prematurely by swapping it with home currency loan. The same can also be achieved by direct access to market and by paying penalty for premature payment.

A swap contract makes it possible at a lower cost. Some of the significant reasons for entering into swap contracts are given below:

● **Hedging Exchange Risk**

Swapping one currency liability with another is a way of eliminating exchange rate risk. For example, if a company (in UK) expects certain inflows of deutschemarks, it can swap sterling liability into deutschemark liability.

● **Differing financial Norms**

The norms for judging credit-worthiness of companies differ from country to country. For example, Germany or Japanese companies may have much higher debt-equity ratios than what may be acceptable to US lenders. As a result, a German or Japanese company may find it difficult to raise a dollar loan in USA. It would be much easier and cheaper for these companies to raise a home currency loan and then swap it with a dollar loan.

● **Credit Rating**

Certain countries such as USA attaches greater importance to credit rating than some others like those in continental Europe. The later look, inter-alia, at company's reputation and other important aspects. Because of this difference in perception about rating, a well reputed company like IBM even with lower rating may be able to raise loan in Europe at a lower cost than in USA. Then this loan can be swapped for a dollar loan.

● **Market Saturation**

If an organization has borrowed a sizable sum in a particular currency, it may find it difficult to raise additional loans due to 'saturation' of its borrowing in that currency. The best way to tide over this difficulty is to borrow in some other 'unsaturated' currency and then swap. A well-known example of this kind of swap is World Bank-IBM swap. Having borrowed heavily in German and Swiss market, the WB had difficulty raising more funds in German and Swiss currencies. The problem was resolved by the WB making a dollar bond issue and swapping it with IBM's existing liabilities in deutschemark and Swiss franc.

Example :

XYZ ltd. operating in USA requires $34 lakhs for expansion purposes. Similarly

ABC ltd. operating in Britain requires £ 20 lakhs. The interest rates prevailing in USA is 9% for both $ and £ whereas in Britain the interest rates are 12% and 8% for borrowing in $ and £ respectively. Assuming 1 £ = $ 1.70 and the loan requirement is 6 months for both the parties, examine whether currency swap agreement beneficial?

XYZ ltd. requires $ 34 lakhs and ABC ltd. requires £ 20 lakhs which is equivalent to $ 34 lakhs (£ 20 lakhs x $ 1.70). So both the parties requires same principal amount.

Benefit on interest rate

	£ Borrowing Rate	$ Borrowing Rate
ABC ltd.	12%	8%
XYZ ltd.	9%	9%
Competitive advantage	3%	1%

Here, XYZ ltd. enjoys 3% benefit in £ loan and ABC ltd. enjoys 1% benefit on $ loan, i.e. both the parties enjoy competitive advantage.

So as per the competitive advantage, XYZ ltd. will borrow in terms of £ and ABC ltd. will borrow in $ and swap.

Computation of net mutual benefit

Company (1)	Intention (2)	Borrow (3)	Pays (5)	Net Cost (6)	Cost without swap (7)	Net Benefit (8) = (7- 6)
ABC Ltd.	Borrow £	$ @ 8%	£ @ 9%	9%	12%	3%
XYZ Ltd.	Borrow $	£ @ 9%	$ @ 8%	8%	9%	1%

Net Benefit of ABC ltd. = £ 20 lakhs x 3% × 6/12 = £ 30,000

Net Benefit of XYZ ltd. = $ 34 lakhs x 1% × 6/12 = $ 17,000

It shows that the currency swap agreement is beneficial for both the parties.

6.6 Summary

The foreign exchange market assists international trade and investment by enabling currency conversion. The purpose of the foreign exchange market is to

permit transfers of purchasing power denominated in one currency to another i.e. to trade one currency for another. The Foreign Exchange Market performs three types of functions like Transfer Function, Credit Function and Hedging Function. The major Foreign Exchange Markets are Spot Market, Forward Market, Future Market, Option Market and Swap Market. Forward, Futures, Options and Swaps are called derivatives because they derive their value from the underlying exchange rates are discussed in detail here with suitable numerical problems.

6.7 Exercise

1. A foreign currency dealer quotes the following exchange rates :

   (i) INR/AED : 17.823/45

   (ii) INR/THB : 1.16/35

   (iii) INR/CAD : 34.42/78

   You as a customer is interested to purchase 10,000 units of THB and then would like to convert THB so obtained into AED. Determine the amount of AED.

2. Determine the exchange rate between GBP and CAD using the following given rates :

   (i) USD/GBP : 1.63 – 1.74

   (ii) CAD/USD : 1.123 – 1.245

3. Find the cross-rates between Pound Sterling and Arab Emirate Dinar based on the following exchange rate quotations:

   (i) CAD/GBP : 1.823/36

   (ii) AED/CAD : 0.8334/48

4. Consider a three months forward contract on a non-dividend paying share which is available at Rs. 70. If CCRF rate of interest is 8% p.a. what would be the contract price? ($e^{0.02} = 1.0202$)

5. Assume that 3 months future contract of nifty has spot price of Rs. 1090. CCRF rate of return is 12% p.a. and CCRF rate of yield on underlying asset is 4% p.a. Lot size is 200 shares. Find the value of future contract.

6. An importer has purchased goods worth $ 20,000 from a customer in USA. Current spot price is Rs. 72.34/$. Expected date of payment is after 3 months when expected spot price of $ is Rs. 74.32. Forward price quoted by bank for 3 months is Rs. 73.37/$. What should the importer do protect himself the exchange rate fluctuation?

7. An investor has bought a futures contract on the stock of Tata Motors Ltd. at Rs. 1100. Each contract consists of 200 shares. The initial margin is set by the exchange at 4%, while the maintenance margin is 90% of initial margin. Clearing prices of the stock for the next 10 days are given below:

Day	1	2	3	4	5	6	7	8	9	10
Price (Rs.)	1100	1200	1240	1390	1220	1140	1450	1124	1355	1465

Assume that on the 10th day, the Investor squares off his position at Rs. 1465. Find out the gain or losses of long and short positions of the investor. You are required to show necessary calculations.

8. Mr. Alen was bullish about XY Co. Ltd. He buys 500 shares at current market price of Rs. 110 per share. Fearing a fall in the market price he has bought option contract involving 500 shares with exercise price of Rs. 112 at a premium of Rs. 7 per share. Calculate his profit/loss under different spot prices: Rs. 120, 125, 100, 105, 110, 115, 120 and 125. Also compute Break Even Point.

9. An investor decides to create a bull spread by the way of buying a call option on a stock with an exercise price of Rs. 200 and for a premium of Rs. 7/share and selling a call option with exercise price of Rs. 210 and premium of Rs. 3/share. Calculate the profit/loss if on the settlement day spot prices of the security is Rs. 195, Rs. 206 and Rs. 213. Also compute Break Even Point (BEP).

10. MM Ltd. operating in UK requires £ 20 lakhs for expansion purposes. Similarly GC Ltd. operating in USA requires $ 30 lakhs. The interest rates prevailing in UK is 8% for both $ and £ whereas in USA the interest rates are 11% and 6% for borrowing in $ and £ respectively. Assuming 1 £ = $ 1.50 and the loan requirement is 6 months for both the parties, examine whether currency swap agreement beneficial ?

Unit - 7 ❑ Parity Condition in International Finance

Structure

7.0 Objectives

By the end of this lesson, learners will be able to:

● describe the concept of Parity Condition in International Finance,

● understand the important theories of the Equilibrium Framework,

● explain the concepts of Purchasing Power Parity, Interest Rate Parity, Fisher Effect and International Fisher Effect,

● differentiate between PPP, IRP and IFE,

● explain the Parity relationships in International Finance, and

● compute various numerical problems relating to the Parity Conditions in International Finance.

7.1 Introduction

It is necessary to know long-term future exchange rates in order to take strategic decisions concerning investment and management of foreign subsidiaries. These predictions of future rates will be written in the strategic plan of the group as a whole, comprising the parent as well as the different subsidiaries. Besides long-term future rates, it is equally important to estimate exchange rate in medium term, that is, over a period of one year, because cash flows of subsidiaries consist of domestic as well as foreign currencies. Short-term prediction on the other hand, is necessary for managing exchange exposure on day-to-day basis.

Generally graphs and charts are used for short-term prediction while fundamentals are used for predicting medium and long term rates. Fundamentals consist of factors like interest rates, inflation, economic growth, and money supply. It is reasonable to assume that these factors will have some impact on exchange rate. The effect of each of them may not always be distinctly clear, yet the fact is that each of the fundamental factors has an influence on the evolution of exchange rates.

From the above, the significance of prediction of future exchange rate is apparent. Theorists have been trying to explain exchange rate variations and to predict their future course. Several theories have been propounded to this effect.

These theories, by and large, use factors such as inflation, interest rates and balance of payment deficit. The four important theories are :

   (1) Purchasing Power Parity (PPP), and

   (2) Interest Rate Parity (IRP).

   (3) Fisher Effect

   (4) International Fisher Effect

7.2 Parity Conditions in International Finance

Parity Conditions provide an intuitive explanation of the movement of prices and interest rates in different markets in relation to exchange rates. The derivation of these conditions requires the assumption of Perfect Capital Markets (PCM).

- No transaction costs

- No taxes

- Complete certainty Note – Parity Conditions are expected to hold in the long-run, but not always in the short term.

We shall now examine a simple yet elegant set of equilibrium (or parity) conditions that should apply to product prices, interest rates, and spot and forward exchange rates if the markets are not impeded. These parity conditions provide the foundation for much of the theory and practice of international finance. In competitive markets, characterized by numerous buyers and sellers having low-cost access to information, exchange-adjusted prices of identical tradable goods and financial assets must be within transactions costs of equality worldwide.

This idea, referred to as the law of one price, is enforced by international arbitrageurs who follow the profit-guaranteeing dictum of "buy low, sell high" and prevent all but trivial deviations from equality. Similarly, in the absence of market imperfections, risk-adjusted expected returns on financial assets in different markets should be equal.

Five key theoretical economic relationships, which are depicted in the following figure, result from these arbitrage activities. This framework emphasizes the links among prices, spot exchange rates, interest rates, and forward exchange rates.

According to the diagram, if inflation in, say, France is expected to exceed inflation in the United States by 3 per cent for the coming year, then the French franc should decline in value by about 3 per cent relative to the $. By the same token, the one-year forward French franc should sell at a 3 per cent discount relative to the U.S. $. Similarly, one-year interest rates in France should be about 3 per cent higher than one-year interest rates on securities of comparable risk in the United States.
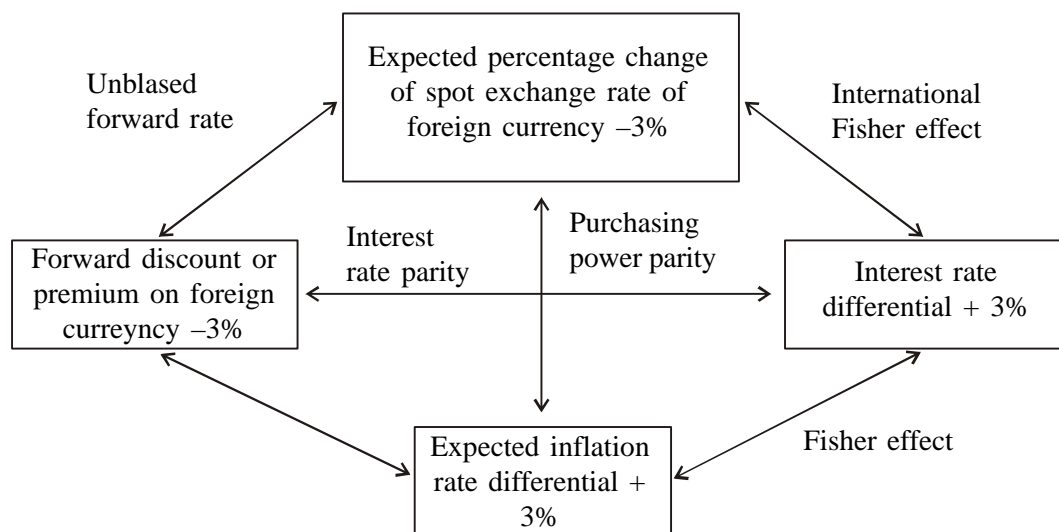
7.3 Purchasing Power Parity (PPP) Theory

The first original reference of PPP Theory was made by David Ricardo. However, Gustav Cassel popularized this theory in 1918. According to PPP theory, when exchange rates are of a fluctuating nature, the rate of exchange between two currencies in the long run will be fixed by their respective purchasing powers in their own nations.

Purchasing Power Parity theory is based on the premise that the same product cannot have different prices in two different markets at any given point of time. This theory assumes restriction free movements of goods and absence of incidental costs such as transportation. According to this theory, if a product costs Rs 100 in India and $ 2.5 in USA, then one US $ has to be equal to Rs 40. That is, a sum of Rs 100 has the same purchasing power as the sum of $ 2.5.

This theory was first enunciated by Gustav Cassel, a Swedish economist. He said that the purchasing power of a currency is determined by the amount of goods and services that can be purchased with one unit of that currency. If there is more than one currency, the exchange rates between them should be such that they provide the same purchasing power to different currencies. In case the existing rate is such that purchasing power parity does not exist, it is a situation of disequilibrium. It is expected that the exchange rate among different currencies conforms eventually to purchasing power parity. Though this theory is conceptually sound, there are a number of factors which prevent it from predicting exchange rate in practice. Some of the major factors in this regard are :

(i)   Trade restrictions,

(ii) Government restrictions on exchange rates,

(iii) Continuation of long-term flows despite the disequilibrium between purchasing power parity and exchange rates,

(iv) Lack of definition of the relevant rate of inflation and price levels.

For example, it is important to establish whether price indices should be based on only those commodities that are traded internationally or on all commodities. The PPP takes into account only the movement of goods and not that of capital. In operational terms, it is concerned only with the current account segment of Balance of Payments and not the total BOP. If a currency is an instrument of payment for other countries, as is the case with the US $, then exchange rate may evolve in a manner independent of price level of the country concerned, i.e. USA.

The PPP theory is ideal for predicting exchange rates in specific situations such as high rate of inflation or monetary disturbances. In these specific situations, the response of individuals to changes in value of real and monetary assets is expected to be strong and the prediction of exchange rates by the PPP theory may turn out to be realistic.

Foreign currency is demanded by the people because it has some purchasing power in its own nation. Also domestic currency has a certain purchasing power, because it can buy some amount of goods/ services in the domestic economy. Thus, when home currency is exchanged for any foreign currency, in fact the domestic purchasing power is being exchanged for the purchasing power of that foreign

currency. This exchange of the purchasing power takes place at some specified rate where purchasing of two currencies nations gets equalized. Thus, the relative purchasing power of the two currencies determines the exchange rate. The exchange rate under this theory is in equilibrium when their domestic purchasing powers at that rate of exchanges are equivalent e.g., Suppose certain bundle of goods/ services in U.S.A. costs U.S. $ 10 and the same bundle in India costs, `450/- then the exchange rate between Indian Rupee and U.S. $ is $1 = `45. Because this is the exchange rate at which the parity between the purchasing power of two nations is maintained. A change in the purchasing power of any currency will reflect in the exchange rates also. Hence under this theory the external value of the currency depends on the domestic purchasing power of that currency relative to that of another currency.

In short, what this means is that a bundle of goods should cost the same in Canada and the United States once you take the exchange rate into account.

7.3.1. Purchasing Power Parity and Baseball Bats

First suppose that one U.S. $ (USD) is currently selling for ten Mexican Pesos (MXN) in foreign exchange market. In the United States wooden baseball bats sell for $40 while in Mexico they sell for 150 pesos. Since 1 USD = 10 MXN, then the bat costs $40 USD if we buy it in the U.S. but only 15 USD if we buy it in Mexico. Clearly there's an advantage of buying the bat in Mexico, so consumers are much better off going to Mexico to buy their bats.

If consumers decide to do this, we should expect to see three things happen:

1. American consumers desire Mexico Pesos in order to buy baseball bats in Mexico. So they go to an exchange rate office and sell their American $s and buy Mexican Pesos. This will cause the Mexican Peso to become more valuable relative to the U.S. $.

2. The demand for baseball bats sold in the United States decreases, so the price American retailers charge goes down.

3. The demand for baseball bats sold in Mexico increases, so the price Mexican retailers charge goes up.

Eventually these three factors should cause the exchange rates and the prices in

the two countries to change such that we have purchasing power parity. If the U.S. $ declines in value to 1 USD = 8 MXN, the price of baseball bats in the United States goes down to $30 each and the price of baseball bats in Mexico goes up to 240 pesos each, we will have purchasing power parity. This is because a consumer can spend $30 in the United States for a baseball bat, or he can take his $30, exchange it for 240 pesos (since 1 USD = 8 MXN) and buy a baseball bat in Mexico and be no better off.

7.3.2. Purchasing Power Parity and the Long Run

Purchasing-power parity theory tells us that price differentials between countries are not sustainable in the long run as market forces will equalize prices between countries and change exchange rates in doing so. You might think that my example of consumers crossing the border to buy baseball bats is unrealistic as the expense of the longer trip would wipe out any savings you get from buying the bat for a lower price. However it is not unrealistic to imagine an individual or company buying hundreds or thousands of the bats in Mexico then shipping them to the United States for sale. It is also not unrealistic to imagine a store like Walmart purchasing bats from the lower cost manufacturer in Mexico instead of the higher cost manufacturer in Mexico. In the long run having different prices in the United States and Mexico is not sustainable because an individual or company will be able to gain an arbitrage profit by buying the good cheaply in one market and selling it for a higher price in the other market. Since the price for any one good should be equal across markets, the price for any combination or basket of goods should be equalized.

Why is a $ worth ` 48.80, JPY 122.18, etc. at some point of time? One possible answer is that these exchange rates reflect the relative purchasing powers of the currencies, i.e. the basket of goods that can be purchased with a $ in the US will cost ` 48.80 in India and ¥ 122.18 in Japan.

There are two forms of the PPP theory:

1. Absolute form of PPP

2. Relative form

7.3.3. Absolute form of PPP

The Absolute Form of the PPP is based on the 'law of one price' which states that people all over the world are willing to pay the same price for the same type

of goods and services. It shows how the exchange rate between the currencies of two countries is related to the price levels of the two countries. If the cost of a representative basket of goods and services in the home country were the same as that in the foreign country, then absolute PPP would hold.

If S_0 is the spot exchange rate and P_h and P_f are the prices of the representative basket of goods and services of the home country and foreign country respectively, then, $S_0 = P_h / P_f$

The exchange rate must adjust in such a manner that the domestic price level and the foreign price (converted at the spot rate) become equal. An increase in P_h must be compensated by a corresponding increase in P_f. Otherwise, S0 would increase implying depreciation in the value of the home currency.

In Equilibrium Form :

$S = \alpha P_D / P_F$

Where,

S = spot rate

P_D = is the price level in India, the domestic market.

P_F = is the price level in the foreign market, the US in this case.

α = Sectorial price and sectorial shares constant.

For example, a cricket bat sells for ` 1000 in India. The transportation cost of one bat from Ludhiana to New York costs ` 100 and the import duty levied by the US on cricket bats is ` 200 per bat. Then the sectorial constant for adjustment would be 1000/1300 = 0.7692.

Example : P_h = Rs.100 and Pf = $2, then S_0 will be Rs. 50/$

Since $S_0 = P_h / P_f$

If P_h increases to 102 due to inflation, then either P_f should increase to $2.1 or S_0 should increase to Rs.51/$

Limitations of Absolute form of PPP

● The assumption is that free trade will equalise the price of a commodity in different countries. Otherwise, arbitrage opportunities would arise in the international markets for real goods and services

- The absolute version of PPP ignores the effect of transportation costs, quotas, tariffs, etc. on free trade

- Free trade does not happen in reality and price of products and services in different countries is not equal

- Absolute PPP is therefore unlikely to hold if these imperfections do exist

7.3.4. Relative version of the PPP

The relative PPP is a weaker relationship than absolute PPP. It shows that the rate of change in the spot exchange rate between two countries will tend to equal the difference in the inflation rates between the two countries. This version of the PPP is popularly used.

It becomes extremely messy if one were to deal with millions of products and millions of constants. One way to overcome this is to use a weighted basket of goods in the two countries represented by an index such as Consumer Price Index. However, even this could break down because the basket of goods consumed in a country like Finland would vary with the consumption pattern in a country such as Malaysia making the aggregation an extremely complicated exercise.

The relative form of the Purchasing Power Parity tries to overcome the problems of market imperfections and consumption patterns between different countries. A simple explanation of the Relative Purchase Power Parity is given below :

Assume the current exchange rate between INR and USD is ` 50 / $1. The inflation rates are 12% in India and 4% in the US. Therefore, a basket of goods in India, let us say costing now ` 50 will cost one year hence ` 50 × 1.12 = ` 56.00.A similar basket of goods in the US will cost USD 1.04 one year from now. If PPP holds, the exchange rate between USD and INR, one year hence, would be ` 56.00 = $1.04. This means, the exchange rate would be ` 53.8462 / $1, one year from now. This can also be worked backwards to say what should have been the exchange rate one year before, taking into account the inflation rates during last year and the current spot rate.

Expected spot rate = Current Spot Rate x expected difference in inflation rates

$E(S1) = S0 \times (1 + I_d) / (1 + 1_f)$

Where

E (S1) is the expected Spot rate in time period 1

S0 is the current spot rate (Direct Quote)

I_d is the inflation in the domestic country (home country)

I_f is the inflation in the foreign country

According to Relative PPP, any differential exchange rate to the one propounded by the theory is the 'real appreciation' or 'real depreciation' of one currency over the other. For example, if the exchange rate between INR and USD one year ago was ` 45.00. If the rates of inflation in India and USA during the last one year were 10% and 2% respectively, the spot exchange rate between the two currencies today should be

S0 = 45.00 × (1 + 10%)/(1 + 2%) = ` 48.53

However, if the actual exchange rate today is ` 50,00, then the real appreciation of the USD against INR is ` 1.47, which is 1.47/45.00 = 3.27% and this appreciation of the USD against INR is explained by factors other than inflation.

PPP is more closely approximated in the long run than in the short run, and when disturbances are purely monetary in character.

7.3.5. Criticism of Purchasing Power Parity (PPP) Theory

1. Limitations of the Price Index : As seen above in the relative version the PPP theory uses the price index in order to measure the changes in the equilibrium rate of exchange. However, price indices suffer from various limitations and thus theory too.

2. Neglect of the demand / supply Approach : The theory fails to explain the demand for as well as the supply of foreign exchange. The PPP theory proves to be unsatisfactory due to this negligence, as in actual practice the exchange rate is determined according to the market forces such as the demand for and supply of foreign currency.

3. Unrealistic Approach : Since the PPP theory uses price indices which itself proves to be unrealistic. The reason for this is that the quality of goods and services included in the indices differs from nation to nation. Thus, any comparison without due significance for the quality proves to be unrealistic.

4. Unrealistic Assumptions : It is yet another valid criticism that the PPP theory is based on the unrealistic assumptions such as absence of transport cost. Also it wrongly assumes that there is an absence of any barriers to the international trade.

5. Neglects Impact of International Capital Flow : The PPP theory neglects the impact of the international capital movements on the foreign exchange market. International capital flows may cause fluctuations in the existing exchange rate.

6. Rare Occurrence : According to critics, the PPP theory is in contrast to the Practical approach. Because, the rate of exchange between any two curren-cies based on the domestic price ratios is a very rare occurrence.

Despite these criticisms the theory focuses on the following major points :

1. It tries to establish relationship between domestic price level and the exchange rates.

2. The theory explains the nature of trade as well as considers the BOP (Balance of Payments) of a nation.

7.4. Theory of Interest Rate Parity (IRP)

Interest Rate Parity (IPR) theory is used to analyse the relationship between the spot rate and a corresponding forward (future) rate of currencies. The IPR theory states interest rate differentials between two different currencies will be reflected in the premium or discount for the forward exchange rate on the foreign currency if there is no arbitrage - the activity of buying shares or currency in one financial market and selling it at a profit in another. The theory further states size of the forward premium or discount on a foreign currency should be equal to the interest rate differentials between the countries in comparison.

Interest Rate Parity is a theory which states that 'the size of the forward premium (or discount) should be equal to the interest rate differential between the two countries of concern". When interest rate parity exists, covered interest arbitrage (means foreign exchange risk is covered) is not feasible because any interest rate advantage in the foreign country will be offset by the discount on the forward rate.

Thus, the act of covered interest arbitrage would generate a return that is no higher than what would be generated by a domestic investment.

The Interest Rate Parity equation is given by :

$$(1 + r_d) = F / S \times (1 + r_f)$$

Where :

r_d = The interest rate in the domestic currency or the base currency

r_f = The interest rate in the foreign currency or the quoted currency

S = The current spot exchange rate

F = The forward foreign exchange rate

$(1 + r_d)$ = Amount that an investor would get after a unit period by investing a rupee in the domestic market at rd rate of interest and

$F / S \times (1 + r_f)$ = Amount that an investor by investing in the foreign market at rf that the investment of one rupee yield same return in the domestic as well as in the foreign market.

Examples :

For our illustration purpose consider investing €1000 for 1 year.

We'll consider two investment cases viz:

Case I : Domestic Investment in the U.S.A., consider the spot exchange rate of $1.2245/€1. So we can exchange our €1000 @ $1.2245 = $1224.50 Now we can invest $1224.50 @ 3.0% for 1 year which yields $1261.79 at the end of the year.

Case II : Foreign Investment Likewise we can invest €1000 in a foreign €pean market, say at the rate of 5.0% for 1 year. But we buy forward 1 year to lock in the future exchange rate at $1.20025/€1 since we need to convert our €1000 back to the domestic currency, i.e. the U.S. $.

So €1000 @ of 5.0% for 1 year = €1051.27 Then we can convert €1051.27 @ $1.20025 = $1261.79

Thus, in the absence of arbitrage, the Return on Investment (ROI) is same regardless of our choice of investment method.

7.4.1. Types of Interest Rate Parity

There are two types of IRP :

1. Covered Interest Rate Parity (CIRP) Covered Interest Rate theory states that exchange rate forward premiums (discounts) offset interest rate differentials between two sovereigns. Interest rate parity describes a no-arbitrage relationship between spot and forward exchange rates and the two nominal interest rates associated with these currencies. The relationship is called **covered interest rate parity**.

In another words, covered interest rate theory holds that interest rate differentials between two countries are offset by the spot/forward currency premiums as otherwise investors could earn a pure arbitrage profit. Covered Interest Rate Examples Assume Google Inc., the U.S. based multi-national company, needs to pay its €ean employees in €in a month's time.

Google Inc. can achieve this in several ways viz :

- Buy €forward 30 days to lock in the exchange rate. Then Google can invest in $s for 30 days until it must convert $s to €in a month. This is called covering because now Google Inc. has no exchange rate fluctuation risk.

- Convert $s to €today at spot exchange rate. Invest €in a €ean bond (in €) for 30 days (equivalently loan out €for 30 days) then pay its obligation in €at the end of the month. Under this model Google Inc. is sure of the interest rate that it will earn, so it may convert fewer $s to €today as its € will grow via interest earned. This is also called covering because by converting $s to € at the spot, the risk of exchange rate fluctuation is eliminated.

If $(1 + r_d) = F / S \times (1 + r_f)$, covered interest parity holds

There is no scope for covered interest arbitrage if $(1 + r_d) \neq F / S \times (1 + r_f)$, covered interest parity does not hold,

There is scope for covered interest arbitrage and funds will move from home country to foreign country if $(1 + r_d) \neq F / S \times (1 + r_f)$

Funds will move from foreign country to home country if $(1 + r_d) > F / S \times (1 + r_f)$

2. Uncovered Interest Rate Parity (UIP) Uncovered Interest Rate theory states that expected appreciation (depreciation) of a currency is offset by lower (higher) interest.

In the above example of covered interest rate, the other method that Google Inc. can implement is: Google Inc. can also invest the money in $s today and change it for €at the end of the month. This method is uncovered because the exchange rate risks persist in this transaction.

Covered Interest Rate vs. Uncovered Interest Rate

Recent empirical research has identified that uncovered interest rate parity does not hold, although violations are not as large as previously thought and seems to be currency rather than time horizon dependent. In contrast, covered interest rate parity is well established in recent decades amongst the OECD economies for short-term instruments. Any apparent deviations are credited to transaction costs.

7.4.2 Implications of Interest Rate Parity Theory

If IRP theory holds then arbitrage is not possible. No matter whether an investor invests in domestic country or foreign country, the rate of return will be the same as if an investor invested in the home country when measured in domestic currency.

If domestic interest rates are less than foreign interest rates, foreign currency must trade at a forward discount to offset any benefit of higher interest rates in foreign country to prevent arbitrage.

If foreign currency does not trade at a forward discount or if the forward discount is not large enough to offset the interest rate advantage of foreign country, arbitrage opportunity exists for domestic investors. So domestic investors can benefit by investing in the foreign market.

If domestic interest rates are more than foreign interest rates, foreign currency must trade at a forward premium to offset any benefit of higher interest rates in domestic country to prevent arbitrage.

7.4.3. Limitations of Interest Rate Parity Model

In recent years the interest rate parity model has shown little proof of working. In many cases, countries with higher interest rates often experience currency appreciation due to higher demands and higher yields and have nothing to do with risk-less arbitrage.

7.5. Fisher Effect

Interest rates and inflation are objects of financial fascination around the world. The Fisher effect is a theory about the relationship between the two, basically stating that when one rises, so does the other.

The **Fisher Effect** is an economic hypothesis stating that the real interest rate is equal to the nominal rate minus the expected rate of inflation. It states that, in response to a change in the money supply, the nominal interest rate changes in tandem with changes in the inflation rate in the long run. For example, if monetary policy were to cause inflation to increase by 5 percentage points, the nominal interest rate in the economy would eventually also increase by 5 percentage points. In order to understand the Fisher effect, it's crucial to understand the concepts of nominal and real interest rates. In the late 1930s, U.S. economist Irving Fisher wrote a paper which posited that a country's interest rate level rises and falls in direct relation to its inflation rates.

Fisher mathematically expressed this theory in the following way :

R Nominal = R Real + R Inflation

The equation states that a country's current (nominal) interest rate is equal to a real interest rate adjusted for the rate of inflation. In this sense, Fisher conceived of interest rates, as the prices of lending, being adjusted for inflation in the same manner that prices of goods and services are adjusted for inflation. For instance, if a country's nominal interest rate is six per cent and its inflation rate is two per cent, the country's real interest rate is four per cent (6% – 2% = 4%). In simple terms: an increase in inflation will result in an increase in the nominal interest rate. For example, if the real interest rate is held at a constant 5.5% and inflation increased from 2% to 3%, the Fisher Effect indicates that the nominal interest rate would have to increase from 7.5% (5.5% real rate + 2% inflation rate) to 8.5% (5.5% real rate + 3% inflation rate).

The difference in the nominal interest rates would therefore be due to differences in the levels of inflation in different countries. This explains why, in equilibrium, interest rate differentials must be equal to inflation rate differentials.

The Fisher Effect is stated as –

$$\frac{1+r_h}{1+r_f} = \frac{1+i_h}{1+i_f} \quad \text{.........} \quad (1)$$

Where

r_h is the nominal interest rate in the home country,

r_f is the nominal interest in the foreign country,

i_h is the home country inflation rate and i_f is the foreign country inflation rate

Subtracting 1 from each side of equation (1)

$$\frac{1+r_h-1}{1+r_f} = \frac{1+i_h-1}{1+i_f} \quad \text{.........} \quad (2)$$

$$\frac{1+r_h-1+r_f}{1+r_f} = \frac{1+ih-1+i_f}{1+i_f} \quad \text{.........} \quad (3)$$

$$\frac{r_h-r_f}{1+r_f} = \frac{i_h-i_f}{1+i_f} \quad \text{.........}(4)$$

This shows that, in equilibrium, interest rate differential is equal to inflation rate differential.

Let the exchange rate be $S_0 = \dfrac{P_h}{P_f}$ .... (1)

If the anticipated inflation rate in the home country is i_h and in the foreign country is i_f, then the expected spot rate S_1 will be

$$S_1 = \frac{P_h(1+i_h)}{P_f(1+i_f)} \quad \text{..................}(2)$$

Dividing (2) by (1)

$$\frac{S_1}{S_0} = \frac{(1+i_h)}{(1+i_f)} \quad \text{..................} \quad (3)$$

$$\text{or } S_1 = S_0 \frac{(1+i_h)}{(1+i_f)}$$

$$\frac{S_1}{S_0} = \frac{(1+i_h)}{(1+i_f)} \quad \dots\dots\dots\dots (3)$$

Subtracting 1 from each side –

$$\frac{S_1-1}{S_0} = \frac{(1+i_h)-1}{(1+i_f)} \quad \dots\dots\dots\dots (4)$$

$$\frac{S_1-S_0}{S_0} = \frac{(i_h-i_f)}{(1+i_f)} \quad \dots\dots\dots\dots(5)$$

This shows that :

Expected change in spot rate = inflation rate differential

Example :

Suppose the annual inflation rate in India is expected to be 5% while the US inflation rate is expected to be 4%. Suppose the current spot rate is Rs.60/$. Calculate the one-year spot rate and also show that inflation rate differential is equal to expected change in spot rate.

Solution :

The new exchange rate would be $S_1 = \dfrac{S_0(1+i_h)}{(1+i_f)}$

$$= \frac{60 \times 1.05}{1.04} = Rs.\ 60.5769/\$.$$

Inflation rate differential $= \dfrac{(i_h-i_f)}{(1+i_f)} = \dfrac{.05-.04}{1.04} = .009615 = 0.9615\%$

Expected change in spot rate $= \dfrac{S_1-S_0}{S_0} = \dfrac{60.5769-60}{60}$

$$= .009615 = 0.9615\%$$

The generalized formula would be $S_t = \dfrac{S_0(1+i_h)^t}{(1+i_f)^t}$

7.6. International Fisher Effect

International Fisher Effect states that interest rate differential is equal to expected change in the spot rate. It combines the Purchasing Power Parity Theory and the Fisher Effect.

The purchasing power parity theory is stated as $-\dfrac{S_1}{S_0} = \dfrac{(1+i_h)}{(1+i_f)}$

Rearranging we get $\dfrac{S_1 - S_0}{S_0} = \dfrac{(i_h - i_f)}{(1+i_f)}$, i.e., expected spot rate change is equal to inflation rate differential

The Fisher's Effect is stated as $\dfrac{1+r_h}{1+r_f} = \dfrac{1+i_h}{1+i_f}$

Rearranging we get $\dfrac{r_h - r_f}{1+r_f} = \dfrac{i_h - i_f}{1+i_f}$, i.e., interest rate differential is equal to inflation rate differential

Combing the two theories, the International Fisher Effect may be stated as --

$$\frac{S_1 - S_0}{S_0} = \frac{r_h - r_f}{1+r_f}$$

Expected change in spot rate is equal to interest rate differential.

7.7. Comparison of PPP, IRP and IFE Theories

All the above theories relate to the determination of exchange rates. Yet, they differ in their implications. The theory of IRP focuses on why the forward rate differs from the spot rate and on the degree of difference that should exist. This relates to a specific point of time.

Conversely, PPP theory and IFE theory focuses on how a currency's spot rate will change over time. While PPP theory suggests that the spot rate will change in accordance with inflation differentials, IFE theory suggests that it will change in accordance with interest rate differentials. PPP is nevertheless related to IFE because inflation differentials influence the nominal interest rate differentials between two countries.

Theory	Key Variables	Basis	Summary
Interest Rate Parity (IRP)	Forward rate Premium (or discount)	Interest rate differential	The forward rate of one currency will contain a premium (or discount) that is determined by the differential in interest rates between the two countries. As a result, covered interest arbitrage will provide a return that is no higher than a domestic return.
Purchasing Power Parity (PPP)	Percentage change in spot exchange rate.	Inflation rate differential.	The spot rate of one currency w.r.t. another will change in reaction to the differential in inflation rates between two countries. Consequently, the purchasing power for consumers when purchasing goods in their own country will be similar to their purchasing power when importing goods from foreign country.
International Fisher Effect (IFE)	Percentage change in spot exchange rate	Interest rate differential	The spot rate of one currency w.r.t. another will change in accordance with the differential in interest rates between the two countries. Consequently, the return on uncovered foreign money market securities will on average be no higher than the return on domestic money market securities from the perspective of investors in the home country.

7.8 Parity Relationships

7.8.1 Assumptions underlying International Financial Management

Neo-classical assumptions regarding well-functioning markets have given rise to equilibrium theories about international trade and common pricing (parity) links between international capital markets, foreign exchange markets and product and factor markets.

7.8.2. The Equilibrium Framework

The parity relationships can be stated as follows :

- ***Inflation rate differential = Expected spot rate change***

The theorem explaining this relationship is the Purchasing Power Parity (PPP) Theorem

- ***Expected spot rate change = Forward premium or discount***

This relationship is explained by the Unbiased Forward Rate (UFR) Theorem

- ***Forward premium or discount = Interest rate differential***

The theorem underlying this relationship is the Interest Rate Parity (IRP) Theorem

- ***Interest rate differential = Inflation rate differential***

The Fisher Effect explains this relationship

- ***Interest rate differential = Expected spot rate change***

The International Fisher Effect explains this relationship

Parity relationships
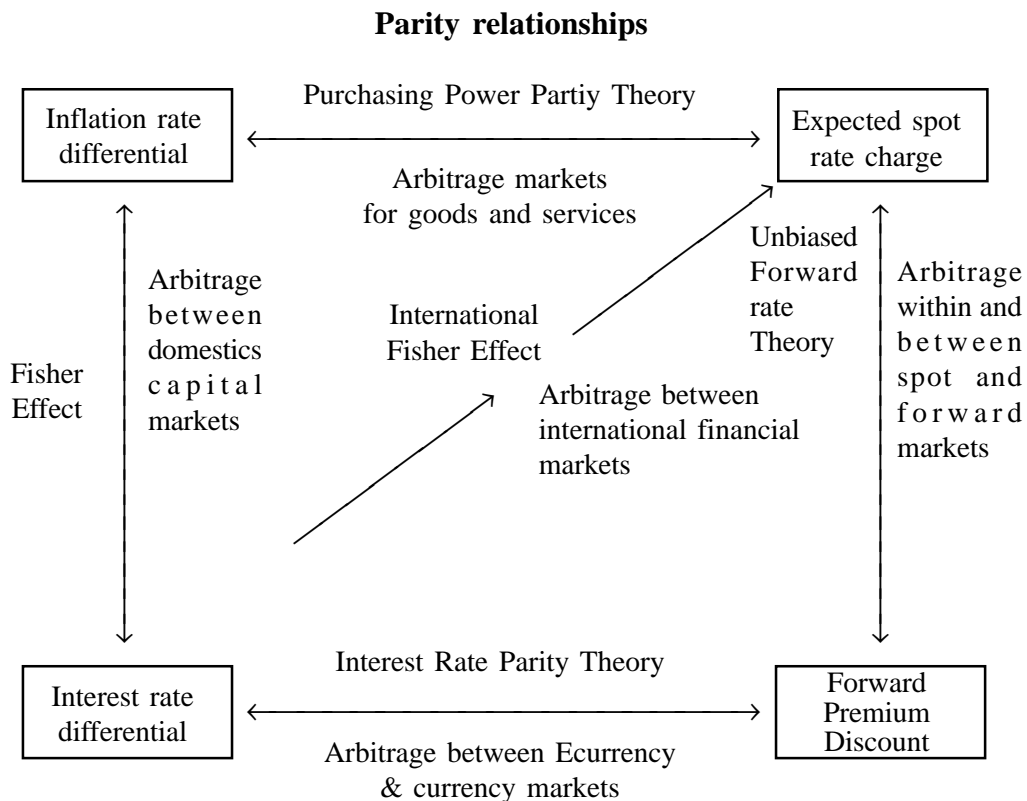
These relationships imply that between two countries A and B :

If the annual inflation in country A is anticipated to be 2% higher than in country B then

● The currency value of country A would be expected to decline by 2% as compared to the currency value of country Bin the spot market

● The currency of country A would be expected to sell in the one-year forward market   at a discount of 2% as compared to the currency of country B

● The one-year interest rate in country A would be expected to be 2% higher than that in country B

7.9. Unbiased Forward Rate (URF) Theory

The forward rate may be considered to be an unbiased predictor of the future spot rate. Any anticipated difference between the forward rate and the future spot rate

would give rise to arbitrage opportunities within and between the spot and forward markets. If the spot rate is expected to be less than the forward rate, arbitrageurs would sell forward expecting to profit from the difference. This would depress the forward rate. If the spot rate is expected to be more than the forward rate, arbitrageurs would buy forward expecting to profit from the difference. This would push up the forward rate. In equilibrium the future spot rate must be equal to the forward rate. Therefore, one year forward rate (say) will be equal to the spot rate expected after one year.

$F_1 = S_1$

More generally, $F_t = S_t$

The theory can be stated as

$S_t / S_0 = F_t / S_0$ .... (1)

Subtracting 1 from each side of equation (1) –

$S_t / S_0 - 1 = F_t / S_0 - 1$ .... (2)

$$\frac{S_t - S_0}{S_0} = \frac{F_t - S_0}{S_0}$$

This means that expected change in spot rate = forward premium or discount.

7.10 Summary

Parity Conditions provide an intuitive explanation of the movement of prices and interest rates in different markets in relation to exchange rates. There are four important parity condition theories in the international finance which are Purchasing Power Parity (PPP), Interest Rate Parity (IRP), Fisher Effect and International Fisher Effect which is discussed in detail with numerical examples under this unit. In this context, the differences and Parity relationships in International Finance is also discussed along with Unbiased Forward Rate (URF) Theory.

7.11 Exercises

Theoretical Questions

1. Discuss the concept of parity condition in international Finance.

2. Differentiate between absolute purchasing power parity and relative purchasing power parity with the help of suitable examples.

3. Explain with the help of an example the concept of interest rate parity.

4. Discuss the concept of covered interest rate parity how it differs from uncovered interest rate parity.

5. Explain with the help of an example the theory of International fisher effect

6. What do you mean by unbiased forward rate theory?

Numerical Questions

1. The interest rate on £ is 5% it and the interest rate on $ is 8%. The £ spot rate is $ 1.6730 and the one-year forward rate of £ is $ 1.7120. Comment weather interest rate parity condition holds.

2. The Spot Exchange rate of pound today is $ 1.5640 and the three months forward rate is $ 1.55. Assuming parity relationship holds and if interest rate is 6% in USA what should be the corresponding interest rate in UK?

3. The interest rate on €deposits is 4.75- 4.5% p.a. While the interest rate on $ deposits are 7.45-7.30% p.a. The current spot rate is €0.7580-620 / $ and the one year forward rate is €lo 0.7460-520 / $. Assuming parity relationship holds is there any arbitrage opportunity?

4. The rupee $ exchange rate now is rupees 45 per $. Expected inflation rate in India is 5% and that of us is 4%. What will be the spot rate? Also show that purchasing power parity holds.

5. The spot exchange rate between Danish krone and USD is $ 0.20 / krone. The one year forward rate quoted by a large US bank is $ 0.21 / krone. The interest rate on Danish krone is 8% per year and inflation rate is 4%.

    (a) What is the implied interest rate on USD deposits if covered interest rate parity holds?

    (b) What is the inflation rate in US expected to be if the interest rate parity holds?

6. The rate of inflation in USA is likely to be 3% p.a. And in Istanbul is likely to be 6.5% p.a. The current spot rate of USD in Istanbul is Lyra 4.40/$. Find the expected exchange rate of USD in Istanbul after three years from now.

7. You are a treasurer of US MNC with operations all over the world 1 subsidiary is located in Papua New Guinea and it uses the local currency Kina which was $0.75/kina. On 1st January 2001 if inflation rate in US was 5% and inflation rate in Papua is 3% what was the exchange rate in 1st January 2002 if purchasing power parity holds?

Unit - 8 ❏ Foreign Exchange Risk Management

Structure

8.0 Objectives

By the end of this unit, learners will be able to :

● describe the concept of Foreign Exchange Risk in International Finance,

● understand the important types and techniques of Exposure Management,

● explain the concepts of Strategic and Operational response under risk management,

● compute various numerical problems relating to forward market hedge and money market hedge under Foreign Exchange Risk Management.

8.1 Introduction

Due to variation in exchange rate, over a period of time the value of assets and liabilities or cashflows of an enterprise, that are denominated in foreign currencies undergo a change in their value, as measured in domestic currency. This variability in the value of assets and liabilities or cash flows is referred to as exchange rate risk.

When the inflow and the outflow of assets and liabilities as well as claims and counterclaims in a foreign currency are matched against each other, then there is no net exposure. In such a situation, there is no foreign exchange risk. But foreign exchange risk results from an open position - the position can be either long or short. When an enterprise owns a net claim (or an asset) in foreign currency, it is said to be long; and when it has a liability in foreign currency, it is said to be short. Fluctuations in exchange rates leading to variations in the value of assets and liabilities warrant management or hedging of risk. The word 'hedging' means taking steps to reduce risk. 'Hedging' the risk and 'covering' the risk can be used synonymously. In other words, whatever we do to minimize our financial risk or currency risk is known as hedging.

> Exchange rate risk or foreign currency risk is the possibility that currency fluctuations can affect a company's expected futher operating cash flows. The risk arises due to change in price of one currency in relation to another.

For example, travellers going to visit another country have the risk that if that country's currency appreciates against their own their trip will be more expensive.

An exporter who sells his product in foreign currency has the risk that if the value of that foreign currency falls then the revenues in the exporter's home currency will be lower.

An importer who buys goods priced in foreign currency has the risk that the foreign currency will appreciate thereby making the local currency cost greater than expected.

Fund Managers and companies who own foreign assets are exposed to fall in the currencies where they own the assets. This is because if they were to sell those assets their exchange rate would have a negative effect on the home currency value.
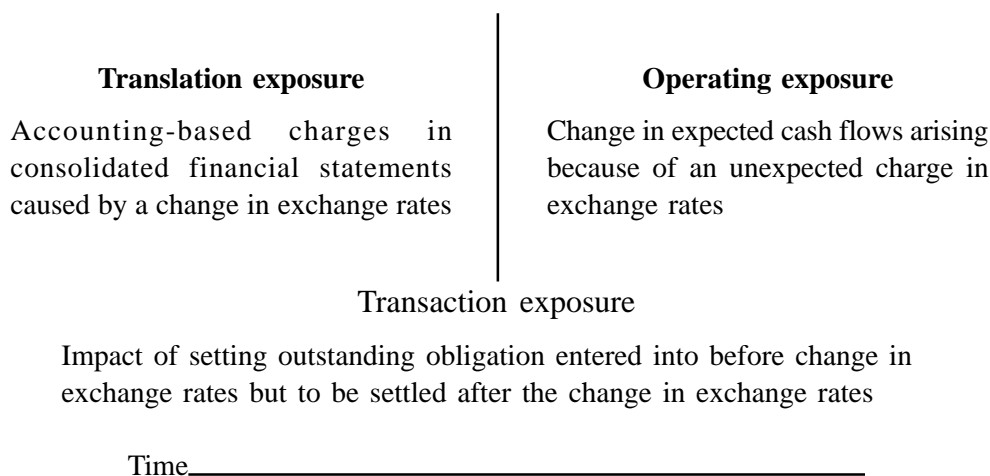
8.2. Foreign Exchange Risk

Foreign exchange risk arises when we deal in the foreign currency. Essentially, what it means is that if exchange rate changes, it affects the amount of cashflow, converted into domestic currency. There are three types of exchange risks. These are : (1) Transaction risk, (ii) Translation or Consolidation risk, and (iii) Economic risk.

Moment in time when exchange rate charges

Translation exposure	Operating exposure
Accounting-based charges in consolidated financial statements caused by a change in exchange rates	Change in expected cash flows arising because of an unexpected charge in exchange rates

Transaction exposure

Impact of setting outstanding obligation entered into before change in exchange rates but to be settled after the change in exchange rates

Time

8.2.1 Transaction Risk

Transaction risk is related to either (i) trade transactions, that is, exports and imports, or (ii) financial operations such as borrowing and lending in foreign currencies, or (iii) payment or receipt of dividends and interests. In other words, a transaction risk occurs when a company is committed to a foreign currency denominated transaction. An exchange rate change in the currency of denomination

of any such contract will result in a direct transaction exchange rate risk to the firm. It measures the effect of an exchange rate change on **outstanding obligations** that existed before exchange rates changed but were settled after the exchange rate changes. This is also known as Transaction Exposure.

Example : If an Indian exporter has a receivable of $100,000 due in six months hence and if the dollar depreciates relative, to the rupee a cash loss occurs. Conversely, if the dollar appreciates relative to the rupee, a cash gain occurs. The above example illustrates that whenever a firm has foreign currency denominated receivables or payables, it is subject to transaction risk and their settlements will affect the firm's cash flow position. Thus, it deals with the changes in the cashflow which arise from **existing contractual** obligation.

In fact, the transaction exposures are the most common ones amongst all the exposures. Let's take an example of a company which exports to US and the export receivables are also denominated in USD. While doing budgeting the company had assumed USD/INR rate of Rs. 62 per USD. By the time the exchange inward remittance arrives. USD/INR could move down to 57 leading to wiping off of commercial profit for exporter. Such transaction risk arises whenever a business has foreign currency denominated receipts or payments. The risk is an adverse movement of the exchange rate from the time the transaction is budgeted till the time the exposure is extinguished by sale or purchase of the foreign currency against the domestic currency.

8.2.2. Translation risk

Translation or consolidation risk relates to assets and liabilities of a balance sheet denominated in foreign currencies. It refers to gains or losses caused by the translation of foreign currency assets and liabilities into the currency of the parent company for consolidation purposes. Translation risk principally impacts a company's balance sheet and results from the translation of foreign assets and liabilities into the company's home currency for accounting purposes consolidating financial statements, the translation could be done either at the end-of-the-period exchange rate or at the average exchange rate of the period, depending on the accounting regulations affecting the parent company. Thus, while income statements are usually translated at the average exchange rate over the period, balance sheet exposures of foreign

subsidiaries are often translated at the prevailing current exchange rate at the time of consolidation. This occurs when the financial statements of a company's foreign subsidiaries are consolidated into the parent's statements and translated into the parent's reporting base currency. As a matter of fact, investors and financial institutions have an interest in knowing the consolidated position of the whole group in domestic currency.

For example, a Swiss food company has an American subsidiary in the sweet business. The subsidiary company had an asset value of Swiss francs 52.5 million (or $35 million) at the beginning of the year, when the exchange rate was sfr1.50 per $1. There was no change in the asset value of the subsidiary during the year due to operational reasons. In that time, however, the Swiss franc strengthened to sfr1.43 per $1. The asset value of the sweet company on the Swiss company's balance sheet has dropped to sfr 500,50,000 ($35 million at 1.43), a loss of SFR 2 450 000 (52,500,000 minus 500,50,000), simply from the translation of the Swiss company's long-term investment in the American sweet company from dollars to Swiss francs. Again, this exposure can be eliminated or mitigated through the use of foreign exchange products such as a forward contract or a currency option.

The exchange risk also affects the estate of an enterprise. For instance, a French company, selling a building owned by its Indonesian subsidiary, would obtain a lower price in Euros than that it would have got by selling it before the devaluation of Indonesian Rupiah in 1997. Different methods of translation are used by different enterprises. These are : (a) current/non-current method, (b) monetary/ non-monetary method, (c) closing (or current) rate method, and (d) temporal method

(a) Current/Non-Current Method

Based on the length of life of an asset or liability, this method uses closing rate for converting current assets and liabilities, and historic rates for converting non-current assets and liabilities Historic rate is the exchange rate which was used at the time of acquisition of an asset or incurring of a liability or when these items entered the balance sheet. The exchange position that results from this method corresponds to the working capital of the enterprise. An appreciation of foreign currency results in a translation gain if the working capital is positive (current assets are more than current liabilities) and a translation loss if the working capital is negative. Reverse

is true in the case of a depreciation of foreign currency. It is possible to modify the exchange position by modifying the factors that affect the working capital. As regards the income statement, its constituent items are converted at the mean rate for the period of the income statement. Exception is made for the figures relating to revenues and expenses linked with long term assets and liabilities (say depreciation and amortization) which are converted using historic rates, that is, at the rates as per the corresponding balance-sheet items. In other words, different revenue and expense items may be translated at different rates, under this method.

(b) Monetary/Non-Monetary Method

This method makes, a distinction between monetary assets and liabilities and nonmonetary ones. The monetary accounts consist of long-term debt, receivables, payables and cash. The non-monetary accounts are physical assets and liabilities such as inventories and fixed assets. Monetary assets and liabilities are converted by using closing rates while non-monetary ones are converted at histone rates. The figures of income statement are converted by using the mean rate of the period, except those related to revenues and expenses linked to non-monetary assets and liabilities which are converted at histone rates. Generally, depreciation expense and cost of goods sold fall in the latter category. These are translated at the same rate as the corresponding balance-sheet items. Thus, it is possible that the cost of goods sold may be translated at a different rate from that used to translate sales.

(c) Closing Rate Method

As per this method all figures are converted by using closing or current rate. Under this method, if a firm's foreign-currency denominated assets exceed its foreign-currency denominated liabilities, a depreciation of foreign currency will result in a loss and appreciation will result in a gain.

(d) Temporal Method

This method is a modified version of the monetary/non-monetary method with the difference that in this method, inventory is translated at the current rate. Income statement items are normally translated at an average rate. However, cost of goods sold and depreciation are translated at historic rates. It is, thus, evident that the methods used give different results as regards the consolidation position and figures

obtained for consolidation gain or loss are also different. Many companies do not provide cover against consolidation risk because they think of it as a simple accounting position. There are others which like to cover this risk. Depending on the method of conversion used, different strategies will be required to reduce the translation risk. For example, companies would try to reduce working capital if the foreign currency is likely to depreciate in the event of their using current/non-current methods.

8.2.3 Economic Exposure

Economic Risk and Economic exposure refer to the extent to which the economic value of a company can decline due to changes in exchange rate. It is the overall impact of exchange rate changes on the value of the firm. The essence of economic exposure is that exchange rate changes significantly alter the cost of a firm's inputs and the prices of its outputs and thereby influence its competitive position substantially.

In essence, economic risk concerns the effect of exchange rate changes on revenues (domestic sales and exports) and operating expenses (cost of domestic inputs and imports). Economic risk is usually applied to the present value of future cash flow operations of a firm's parent company and foreign subsidiaries. Identification of the various types of currency risk, along with their measurement, is essential to develop a strategy for managing currency risk. The measurement of operating exposure is difficult as it is not possible to ignore the effect of inflation while considering the impact of exchange rate change. The effect of these currency-induced changes on corporate revenues and costs depends on the extent of the company's international operations, its competitive environment and its degree of operational flexibility. In order to-manage these relative price changes, the company may adjust its production process or marketing mix. Moreover, a company may try to shift out of currencies which are moving against its long-term profitability. For example, over the period 1985-95, a UK company would have increased its earnings in sterling if it had bought imports denominated in US dollars and sold its exports denominated in Deutschmarks. This is because during this period, Pound sterling was appreciating.

**Effects of Local Currency Fluctuations on Company's
Economic Exposure (Cash inflow)**

Variables influencing the inflow of cash in local currency	Revaluation impact	Devaluation impact
Local sale, relative to foreign	Decrease	Increase
Company's export in local currency	Decrease	Increase
Company's export in foreign currency	Decrease	Increase
Interest payments from foreign investments	Decrease	Increase

**Effects of Local Currency Fluctuations on Company's
Economic Exposure (Cash outflow)**

Variables influencing the inflow of cash in local currency	Revaluation impact	Devaluation impact
Company's import of material the same denoted in local currency	Remain the same	Remain the same
Company's import of material denoted in foreign currency	Decrease	Increase
Interest on foreign debt	Decrease	Increase

8.3. Hedging Currency Risk

A hedge is a type of derivative, or a financial instrument, that derives its value from an underlying asset. Hedging is a way for a company to minimize or eliminate foreign exchange risk. There are a range of hedging instruments that can be used to reduce risk. Broadly these techniques can be divided into two parts (A) Internal Techniques and (B) External Techniques

8.3.1. Internal Techniques

Internal hedging techniques are the techniques those are available within the business itself. These typically should always be considered before resorting to external methods as they can be cheap and relatively straightforward. These techniques explicitly do not involve transaction costs and can be used to completely or partially offset the exposure. These techniques can be further classified as follows :

Companies engaged in exporting and importing, whether of goods or services, are concerned with decisions relating to the currency in which goods and services are invoked. Trading in a foreign currency gives rise to transaction exposure. Although trading purely in a company's home currency has the advantage of simplicity, it fails to take account of the fact that the currency in which goods are invoiced has become an essential aspect of the overall marketing package given to the customer. Sellers will usually wish to sell in their own currency or the currency in which they incur cost. This avoids foreign exchange exposure but buyers' preferences may be for other currencies. Many markets, such as oil or aluminium, in effect require that sales be made in the same currency as that quoted by major competitors, which may not be the seller's own currency. In a buyer's market, sellers tend increasingly to invoice in the buyer's ideal currency. The closer the seller can approximate the buyer's aims, the greater chance he or she has to make the sale

The seller's ideal currency is either home or one which is stable relative to it but often the seller is forced to choose the market leader's currency. Whatever the chosen currency, it should certainly be one with a deep forward market. For the buyer, the ideal currency is usually its own or one that is stable relative to it, or it may be a currency of which the purchaser has reserves.

(i) Leading and Lagging :

Leading and Lagging refer to adjustments at the time of payments in foreign currencies. Leading is the payment before due date while lagging is delaying payment post the due date. These techniques are aimed at taking advantage of expected devaluation and/or revaluation of relevant currencies. Lead and lag payments are of special importance in the event that forward contracts remain inconclusive. For example, Subsidiary b in B country owes money to subsidiary a in country A with payment due in three months' time and with the debt denominated in US dollar. On the other side, country B's currency is expected to devalue within three months against US dollar, vis-à-vis country A's currency. Under these circumstances, if company b leads pays early it will have to part with less of country B's currency to buy US dollars to make payment to company A. Therefore, lead is attractive for the company. When we take reverse the example-revaluation expectation- it could be attractive for lagging.
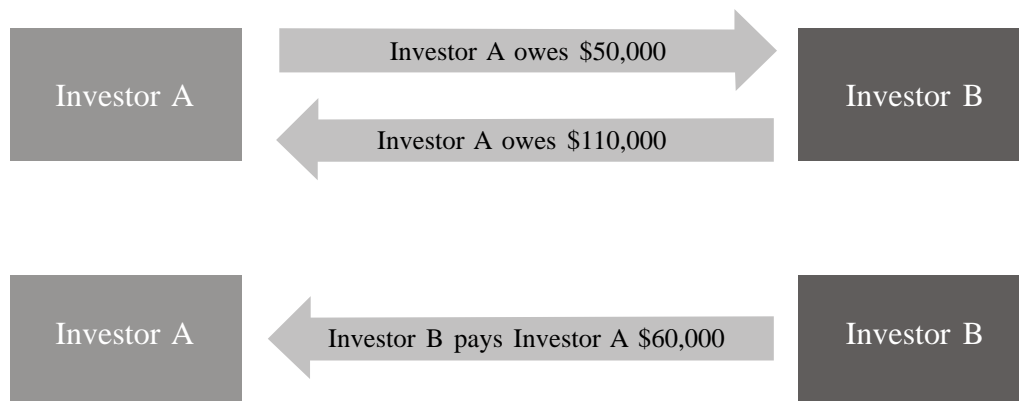
(ii) Netting :

Netting involves associated companies, which trade with each other. The technique is simple. Group companies merely settle inter affiliate indebtedness for the net amount owing. Gross intra-group trade, receivables and payables are netted out. The simplest scheme is known as bilateral netting and involves pairs of companies. Each pair of associates nets out their own individual positions with each other and cash flows are reduced by the lower of each company's purchases from or sales to its netting partner. Bilateral netting involves no attempt to bring in the net positions of other group companies.

Netting basically reduces the number of intercompany payments and receipts which pass over the foreign exchanges. Fairly straightforward to operate, the main practical problem in bilateral netting is usually the decision about which currency to use for settlement.

Netting reduces banking costs and increases central control of intercompany settlements. The reduced number and amount of payments yield savings in terms of buy/sell spreads in the spot and forward markets and reduced bank charges.

Investor A	Investor A owes $50,000 →	Investor B
	← Investor A owes $110,000	

Investor A	← Investor B pays Investor A $60,000	Investor B

Fig. 2 Process of Netting

Here, we provide a simple example of how netting is used in the real world. Investor A owes $50,000 to Investor B, and Investor B owes $110,000 to Investor A. In such a case, we are assuming the settlement date of both transactions and the currency of exchange is the same. Instead of Investor A and B making two separate payments to each other, the transaction values can be netted.

As a result, Investor B would pay $60,000 (net amount) to Investor A, whereas Investor A does not need to pay anything to Investor B. It is an example of settlement or payment netting. It is important to note that if the currencies in our example were different, then such a type of netting would not be used.

(iii) Matching :

Matching refers to the process in which a company matches its currency inflows with its currency outflows with respect to amount and timing. When a company has receipts and payments in same foreign currency due at same time, it can simply match them against each other. Hedging is required for unmatched portion of foreign currency cash flows. This kind of operation is referred to as natural matching. Parallel matching is another possibility. When gains in one foreign currency are expected to be offset by losses in another, if the movements in two currencies are parallel is called parallel matching. Although netting and matching are terms which are frequently used interchangeably, there are distinctions. Netting is a term applied to potential flows within a group of companies whereas matching can be applied to both intra-group and to third-party balancing.

Both Netting and Matching presuppose that there are enabling Exchange Control regulations. For example, an MNC subsidiary in India cannot net its receivable(s) and payable(s) from/to its associated entities. Receivables have to be received separately and payables have to be paid separately.

(iv) Price Variation :

Price variation involves increasing selling prices to counter the adverse effects of exchange rate change. This tactic raises the question as to why the company has not already raised prices if it is able to do so. In some countries, price increases are the only legally available tactic of exposure management.

Let us now concentrate to price variation on intercompany trade. Transfer pricing is the term used to refer to the pricing of goods and services, which change hands within a group of companies. As an exposure management technique, transfer price variation refers to the arbitrary pricing of intercompany sales of goods and services at a higher or lower price than the fair price, arm's length price. This fair price will be the market price if there is an existing market or, if there is not, the price which would be charged to a third party customer. Taxation authorities,

customs and excise departments and exchange control regulations in most countries require that the arm's length pricing should be used.

(v) Asset and Liability Management :

This technique can be used to manage balance sheet, income statement or cash flow exposures. Concentration on cash flow exposure makes economic sense but emphasis on pure translation exposure is misplaced. Hence our focus here is on asset liability management as a cash flow exposure management technique. In essence, asset and liability management can involve aggressive or defensive postures. In the aggressive attitude, the firm simply increases exposed cash inflows denominated in currencies expected to be strong or increases exposed cash outflows denominated in weak currencies. By contrast, the defensive approach involves matching cash inflows and outflows according to their currency of denomination, irrespective of whether they are in strong or weak currencies.

8.3.2. External Techniques

External hedging techniques are the techniques those available outside the business. External methods are slightly costlier and complex than the internal techniques. Under this category range of various financial products are used which can be categorized as follows:

(i) Money Market Hedging

At its simplest, a money market hedge is an agreement to exchange a certain amount of one currency for a fixed amount of another currency, at a particular date. For example, suppose a business owner in India expects to receive 1 million USD in six months. This Owner could create an agreement now (today) to exchange 1Million USD for INR at roughly the current exchange rate. Thus, if the USD dropped in value by the time the business owner got the payment, he would still be able to exchange the payment for the original quantity of U.S. dollars specified.

Advantages and Disadvantages of Money Market Hedge: Following are the advantages and disadvantages of this technique of hedging.

Advantages

(a) Fixes the future rate, thus eliminating downside risk exposure.

(b) Flexibility with regard to the amount to be covered.

(c) Money market hedges may be feasible as a way of hedging for currencies where forward contracts are not available.

Disadvantages include

(a) More complicated to organise than a forward contract.

(b) Fixes the future rate - no opportunity to benefit from favourable movements in exchange rates

(ii) Derivative Instruments

A derivative transaction is a bilateral contract or payment exchange agreement whose value is derived from the value of one or more underlying, which can be commodities, precious metals, currency, bonds, stocks, stocks indices, etc.. Today, derivatives transactions cover a broad range of underlying - interest rates, exchange rates, commodities, equities and other indices. The term derivative is also used to refer to a wide variety of other instruments. These have payoff characteristics, which reflect the fact that they include derivatives products as part of their make- up.

Transaction risk can also be hedged using a range of financial derivatives products which include: Forwards, futures, options, swaps, etc. These instruments are discussed in detailed manner in following pages

Forward Contract Hedging

The change in value in a forward contract is broadly equal to the change in value in the underlying. Forwards differ from options in that options carry a different payoff profile. Forward contracts are unique to every trade. They are customized to meet the specific requirements of each end-user. The characteristics of each transaction include the particular business, financial or risk - management targets of the counterparties. Forwards are not standardized. The terms in relation to contract size, delivery grade, location, and delivery date and credit period are always negotiated. In a forward contract, the buyer of the contract draws its value at maturity from its delivery terms or a cash settlement. On maturity, if the price of the underlying is higher than the contract price the buyer makes a profit. If the price is lower, the buyer suffers a loss. The gain to the buyer is a loss to the seller.

❖ Forwards Rates : A forward rate is an interest rate applicable to a financial transaction that will take place in the future. The forward rate is different from the spot rate. Depending upon whether the forward rate is greater than the spot rate, given the currency in consideration, the forward may either be at a 'discount' or at a 'premium'. Forward premiums and discounts are usually expressed as annual percentages of the difference between the spot and the forward rates.

❖ Premium : If the forward rates are greater than spot rate then it is to be said in premium. When a currency is costlier in forward or say, for a future value date, it is said to be at a premium. In the case of direct method of quotation, the premium is added to both the selling and buying rates. Premium = Forward rate – Spot Rate.

❖ Discount : If the currency is cheaper in forward or for a future value date, it is said to be at a discount. In case of direct quotation, the discount is deducted from both the selling and buying rate. The following example explains how to calculate Premium / Discount both under Indirect/Direct quotes. Discount = Spot rate – Forward rate.

Calculation of Premium and Discount of a currency

To calculate the Premium or Discount of a currency vis-à-vis another, we need to find out how much each unit of the first currency can buy units of the second currency.

For example,

● For instance, if the Spot rate between INR and USD is 55 to a dollar and the six months forward rate is 60 to a dollar, it is clear the USD is strengthening against the Rupee and hence is at a premium which also means that Rupee is at discount.

The premium of USD against INR is 5 for six months in absolute terms. However, forward premium is always expressed as an annual percentage. Therefore, this premium is calculated as

$$[\text{(Forward Rate} – \text{Spot rate)} / \text{(Spot rate)}] \times (12/6)$$

$$= (60 – 55) / (55) \times 12/6 = 18.18\%$$

Rupee is at discount and to calculate the discount, we need to find out how many dollars each Rupee can buy today and six months from now. Therefore, the Spot rate of USD in terms of INR today is USD 1/55 = $ 0.01818 and six months from now is USD 1/60 = $ 0.01667. The discount is calculated as

[(Forward Rate – Spot rate) / (Spot rate)] × 100 × (12/6)

= (0.01667 – 0.01818) / 0.01818 × 12/6

= – 0.00151 / 0.01818 × 12/6 = – 16.61%

The minus sign implies that the Rupee is at discount.

Another important point to be noted in the above example is that the forward premiums do not equal forward discount always. In the aforesaid example, for instance, the rupee is trading at a discount of 16.67% while the dollar is trading at a premium of 18.18%.

- Let's say you are in Swiss market and the CHF/USD spot exchange rate is 0.9880and 3-month forward exchange rate is 0.9895. It means that right now it takes 0.9880 Swiss Francs to buy 1 US Dollar and in 3 months it will take 0.9895 Swiss Francs to buy 1 dollar, i.e. 0.0015 Swiss Francs more per 1 US Dollar. It shows that the foreign currency i.e., the US Dollar is trading at a forward premium because it takes more Swiss Francs to buy US Dollar in future. The CHF is trading at forward discount because 1 Swiss Franc is worth less in future.

[(Forward Rate – Spot rate) / (Spot rate)] × (12/3)

= [(0.9895- 0.9880) / 0.9880] × 100 × 12/3 = + 0.61%

The plus sign implies that the USD is at premium.

8.4. Strategies for exposure management

A company's attitude towards risk, financial strength, nature of business, vulnerability to adverse movements, etc. shapes its exposure management strategies. There can be no single strategy which is appropriate to all businesses. Four separate strategy options are feasible for exposure management.

Exposure Management Strategies
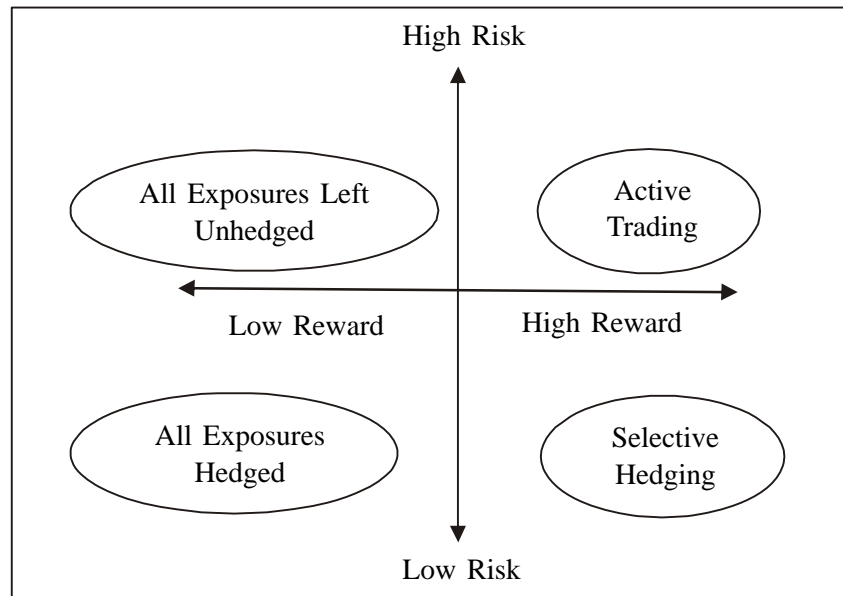
8.4.1 Low Risk : Low Reward

This option involves automatic hedging of exposures in the forward market as soon as they arise, irrespective of the attractiveness or otherwise of the forward rate. The merits of this approach are that yields and costs of the transaction are known and there is little risk of cash flow destabilization. Again, this option doesn't require any investment of management time or effort. The negative side is that automatic hedging at whatever rates are available is hardly likely to result into optimum costs. At least some management seems to prefer this strategy on the grounds that an active management of exposures is not really their business. In the floating rate era, currencies outside their home countries, in terms of their exchange rate, have assumed the characteristics of commodities. And business whose costs depend significantly on commodity prices can hardly afford not to take views on the price of the commodity. Hence this does not seem to be an optimum strategy.

8.4.2 Low Risk : Reasonable Reward

This strategy requires selective hedging of exposures whenever forward rates are attractive but keeping exposures open whenever they are not. Successful pursuit

of this strategy requires quantification of expectations about the future and the rewards would depend upon the accuracy of the prediction. This option is similar to an investment strategy of a combination of bonds and equities with the proportion of the two components depending on the attractiveness of prices. In foreign exchange exposure terms, hedged positions are similar to bonds (known costs or yields) and un-hedged ones to equities (uncertain returns).

8.4.3. High Risk : Low Reward

Perhaps the worst strategy is to leave all exposures un-hedged. The risk of destabilization of cash flows is very high. The merit is zero investment of managerial time or effort.

8.4.4. High Risk : High Reward

This strategy involves active trading in the currency market through continuous cancellations and re-bookings of forward contracts. With exchange controls relaxed in India in recent times, a few of the larger companies are adopting this strategy. In effect, this requires the trading function to become a profit center. This strategy, if it has to be adopted, should be done in full consciousness of the risks.

8.5 Practical Problems on forward market hedge and money market hedge

1. HDIL Ltd. is a listed real estate development company in India, with significant operations in the Mumbai Metropolitan Region has an export exposure of HKD 12,00,000 payable August 31, 2014. Hong Kong Dollar (HKD) is not directly quoted against Indian Rupee.

   The current spot rates are :

INR/GBP	INR. 82.05
HKD/GBP	HKD 9.93

   It is estimated that Hong Kong Dollar will depreciate to 10.89 level and Indian Rupee to depreciate against GBP to Rs. 84.83.

   Forward rates for August 2014 are

| INR/GBP | INR. 86.33 |
| HKD/GBP | HKD 10.77 |

Required :

(i) Calculate the expected loss, if the hedging is not done. How the position will change, if the firm takes forward cover?

(ii) If the spot rates on August 31, 2014 are:

INR/ GBP = Rs. 82.09

HKD /GBP = HKD 9.99

Is the decision to take forward cover justified?

Solution :

Since the direct quote for ¥ and INR is not available it will be calculated by cross exchange rate as follows :

INR/GBP × GBP/HKD = INR/HKD

82.05/9.93 = 8.2628

Spot rate on date of export 1HKD = INR 8.2628

Expected Rate of HKD for August 2014 = Rs.INR7.7897 (INR 84.83/HKD 10.89)

Forward Rate of HKD for August 2014 = INR 8.0158 (INR 86.33/HKD 10.77)

(i) Calculation of expected loss without hedging

Value of export at the time of export (INR 8.2628 × HKD 12,00,000)	INR 99,15,360
Estimated payment to be received on Aug. 2014 (INR 7.7897 × HKD 12,00,000)	INR 93,47,640
Loss	**INR 5,67,720**

Hedging of loss under Forward Cover

INR Value of export at the time of export (Rs. 8.2628 × HKD 12,00,000)	INR 99,15,360
Payment to be received under Forward Cover (INR 8.0158 x HKD 12,00,000)	INR 96,18,960
Loss	**INR 2,96,400**

By taking forward cover loss is reduced to INR 2,96,400.

(ii) Actual Rate of HKD on August 2014 = INR 8.2172 (INR 82.09/HKD 9.99)

Value of export at the time of export (INR 8.2628 × HKD 12,00,000)	INR 99,15,360
Estimated payment to be received on Aug. 2014 (INR 8.2172 x HKD 12,00,000)	INR 98,60,640
Loss	**INR 54,720**

The decision to take forward cover is still justified

2. A company is considering hedging its foreign exchange risk. It has made a purchase on 1st. January, 2008 for which it has to make a payment of British Pound GBP 73,500 on September 30, 2008. The present exchange rate is 1 GBP £ = INR 82.3953. It can purchase forward 1 1 GBP £ at INR 81.5375. The company will have to make a upfront premium of 2% of the forward amount purchased. The cost of funds to the company is 11% per annum and the rate of corporate tax is 45%. Ignore taxation. Consider the following situations and compute the Profit/Loss the company will make if it hedges its foreign exchange risk :

   (i) If the exchange rate on September 30, 2008 is INR 84.5000 per £.

   (ii) If the exchange rate on September 30, 2008 is INR 83.0000 per £.

Solution

	INR
Present Exchange Rate INR 82.3953 = 1 GBP	
If company purchases £ 73,500 forward premium is £ 73,500 × 81.5375 × 2%	119860
Interest on INR 119860 for 9 months at 11%	9888
Total hedging cost	**129748**
If exchange rate is INR 84.50/GBP	
Then gain (INR 84.5000 – INR 81.5375) for £ 73,500	217744
Less : Hedging cost	129748
Net gain	**87996**
If £ = INR 83.0000	
Then loss (81.5375 – 83.00) for £ 73,500	107494
Add: Hedging Cost	129748
Total Loss	**237242**

3. A Company in India has shipped product to USA amounting to US$ 50,000 to be payable after 3 months. The spot rate US$ is Rs.48.2550. Since the cash settlement will take place after 3 months, the open position of US$50,000 is a transaction risk for the Company. The Company asks for a forward quotation to a bank for hedging the risk. The Bank has given following information about the forward market.

Spot rate : US$1 : 48.2550/3500

3 month forward rate : 2500/3000

Using the above information, prepare the hedging strategy for the Company.

Solution :

The Company has open position for receivable of US$50,000 to be settled after

3 month. Any appreciation of rupee against US$ is a risk for the company. Expecting appreciation of rupee the Company planned to go for sell of forward contracts.

The Company would sell US$ 50,000, 3 month forward and the rate would be as follows :

Current Spot : Selling rate : Rs.48.2550

Add 3 month forward rate : Rs. 0.2500

3 month forward sell rate : Rs. 48.5050

After 3 months, the company would surrender the US$ 50,000 and get an exchange rate of Rs.48.5050 per US$. If the rupee appreciated beyond 48.5050, then the company would be profitable. However, if rupee depreciated to 48.6500, than the company would be the loser. In this case the company may go for cancellation of forward contract by paying the required transaction cost.

Forward Contract can be cancelled by the holder of the contract. In the case of cancellation, the party needs to pay exchange margin.

4. Walgreens Boots Alliance sold Omani Rial 3,22,500 value spot to your customer at Rs.167.43 per OMR & covered yourself in Uk stock exchange on the same day, when the exchange rates were

   GBP 1 = OMR 0.4901 0.4941

   Local inter-bank market rates for GBP were

   Spot GBP 1 = Rs. 80.71 80.86

   Calculate cover rate and ascertain the profit or loss in the transaction. Ignore brokerage.

Solution :

The bank (Dealer) covers itself by buying from the market at market selling rate.

Rupee – GBP selling rate Rs. 80.86

Omani Rial – GBP OMR 0.4901

Rupee – Hong Kong cross rate Rs. 80.86 /0.4901, i.e. Rs.164.9867

Profit / Loss to the Bank

Amount received from customer (3,22,500 × 167.43) Rs. 539,96,175

Amount paid on cover deal (3,22,500 × 164.9867) Rs. 532,08,211

Profit to Bank Rs. 7,87,964

5. ABC Ltd. of USA has exported goods worth Can $ 3,90,000 receivable in 9 months. The exporter wants to hedge the receipt in the forward market. The following information is available :

Spot Exchange Rate Rs. 64.56/$

Interest Rate in USA 1.25%

Interest Rate in Indian 8%

The forward rates truly reflect the interest rates differential. Find out the gain/loss to USA exporter if Indian Rs. spot rates (i) declines 1.5%, (ii) gains 5.5% or (iii) remains unchanged over next 6 months.

Solution :

Forward Rate

64.56 [{1+ (0.08) × 9/12}/ {1+ (0.0125) × 9/12}] = Rs.67.7980

(i) If spot rate decline by 1.5%

Spot Rate = Rs. 64.56 × 1.015 =Rs.65.5284/$

£ receipt as per Forward Rate ($ 3,90,000 / Rs.67.7980) = $5752

£ receipt as per Spot Rate ($ 3,90,000/ Rs.65.5284) = $5952

Loss due to forward contract = $200

(ii) If spot rate gains by 5.5%

Spot Rate = Rs. 64.56 × 1.055 =Rs.68.1108/$

£ receipt as per Forward Rate ($ 3,90,000 / Rs.67.7980) = $5752

£ receipt as per Spot Rate ($ 3,90,000/ Rs.68.1108) = $5725

Gain due to forward contract = $27

(iii) If spot rate remains unchanged

£ receipt as per Forward Rate ($ 3,90,000 / Rs.67.7980) =$5752

£ receipt as per Spot Rate ($ 3,90,000/ Rs.64.56) = $6041

Loss due to forward contract = $289

6. Drehr Brewery, a company operating in Hungary is a landlocked country in Central Europe, has today effected sales to an Indian FMCG company, the payment being due 6 months from the date of invoice. The invoice amount is 227 lakhs Hungarian Forint (HUF). At today's spot rate, it is equivalent to Rs. 53.92 lakhs. It is anticipated that the exchange rate will decline by 11% over the 6 months period and in order to protect the HUF payments, the importer proposes to take appropriate action in the foreign exchange market. The 6 months forward rate is presently quoted as 3.91 HUF per rupee. You are required to calculate the expected loss and to show how it can be hedged by a forward contract.

Solution :

Spot rate of Rs. 1 against HUF = 227 lakhs HUF/Rs. 53.92 lakhs = 4.21 HUF

6 months forward rate of Re. 1 against yen = 3.91 HUF

Anticipated decline in Exchange rate = 11%.

Expected spot rate after 6 months = 4.21 HUF – 11% of 4.21

= 4.21 HUF – 0.46 HUF

= 3.75 HUF per rupee

	Rs. (in lakhs)
Present cost of 227 lakhs HUF	53.92
Cost after 6 months: 227 lakhs HUF / 3.75 HUF	60.53
Expected exchange loss	6.61

If the expected exchange rate risk is hedged by a Forward contract :

	Rs. (in lakhs)
Present cost	53.92
Cost after 6 months if forward contract is taken 227 lakhs HUF/3.91 HUF	58.06
Expected loss	4.14

Note : If the exchange rate risk is not covered with forward contract, the expected exchange loss is Rs. 6.61 lakhs. This could be reduced to Rs. 4.14 lakhs if it is covered with Forward contract. Hence, taking forward contract is suggested.

7. Barclays is a British multinational bank and financial services company headquartered in London. It is a universal bank with operations in retail, wholesale and investment banking. Barclays provides financial services across the Globe. The Company raised an invoice amount is ¥ 6,77,500. Credit period is three months. Exchange rates in London are :

Spot Rate (¥/£) 145.4967 – 145.5007

3-month Forward Rate (¥/£) 148.7859 – 148.7890

Rates of interest in Money Market :

	Deposit	Loan
¥	9%	11%
£	5%	8%

Compute and show how a money market hedge can be put in place. Compare and contrast the outcome with a forward contract.

Solution :

In ¥ The borrowing rate is 11% per annum or 2.75% per quarter.

Amount to be borrowed: ¥ 6, 77,500 / 1.0275 = ¥ 6, 59,367.40

Convert : Sell ¥ and buy £. The relevant rate is the Ask rate, namely, ¥ 145.5007 per £,

(Note : This is an indirect quote).

Amount of £s received on conversion is 4531.71 (¥6, 59,367.40 / ¥ 145.5007).

Invest : £ 4531.71 will be invested at 5% for 3 months and get £ 4588.36

Settle : The liability of ¥ 6, 59,367.40 at interest of 2.75 per cent quarter matures to ¥ 6, 77,500 receivable from customer.

Using forward rate, amount receivable is = ¥6, 77,500/ 148.7890 = £4553.43

Amount received through money market hedge = £ 4588.36

Gain = £ 4588.36 – £4553.43 = £34.93

So, money market hedge is beneficial for the exporter.

8. Bhawal Steel Agency, are engaged in the manufacturing, supplying, exporting and importing of a wide range of Stainless Steel products etc. from Brazil and Slovak Republic and exports such products to Singapore and Australia after processing. The company has receivables of SGD 3,50,000 and payables of AUD $ 2,45,00 three months from now. The following rates exchanges rates are available in the market:

Exchanges Rates Rs. / SGD Rs. /AUD$

Spot 46.9580 – 47.0080 49.6825 – 49.7025

Three month forward 47.0680 – 47.0880 49.7225 – 49.7425

The current rates (per annum) are as under

Maturity Rupee (%) SGD(%) AUD$(%)

3 months 7.00/8.00 3.00/3.20 5.00/5.20

The company is considering to cover the exposure either through the forward market or money market. You are required to advise the company as to which alternative should be better for covering both the payable and receivable.

Solution :

Receivable- SGD 3,50,000 3 month

Alternative - I forward cover :

Sell SGD 3,50,000 3m forward @ 47.0680

Inflow after 3 months = 3,50,000 × Rs.47.0680 = Rs.164,73,800

Alternative -II Money market cover (Borrow- sell-invest)

Step I

Borrow the PV of SGD 3,50,000 at 3.20%

∴ PV of SGD = SGD 3,50,000/1.008 = SGD 3,47,222

Step II

Sell SGD 3,47,222 @ 46.9580

Getting = SGD 3,47,222 × Rs. 46.9580/SGD = Rs. 163,04,861

Step III

Invest Rs. 163,04,861 @ 7% i.e. 1.75%

Inflow =163,04,861 × 1.0175 = Rs.165,90,196

Since Rs. inflow is higher in alternative II, Firm should choose money market cover.

Payable AUD 2,45,000 after 3 months

Alternative - I forward cover :

Buy AUD 2,45,000 for 3 month forward at 49.7425

So, outflow after 3 month = Rs.49.7425 × AUD 2,45,000 = Rs.121,86,913

Alternative II Money market Cover (Invest- Buy- Borrow)

Step I :

Invest the PV of $ 100,000 @ 5/4 i.e., 1.25%

AUD 245,000 / 1.0125 = AUD 2,41,975

Step II :

Buy AUD 2,41,975 spot at Rs.49.7025

Requiring [2,41,975 × Rs.49.7025] = Rs. 120,26,778

Step III :

Borrow Rs. 1,20,26,778 at 8/4 i.e., 2%

So outflow after 3 month Rs. 120, 26,778 × 1.02 = Rs. 122, 67,313

Since Rupee outflow is lower under alternative I forward cover is recommended.

8.6 Summary

The risk involved in Foreign Exchange Market, which arises due to variation in exchange rates and the value of assets or liabilities or cash flows of an enterprise changes, is referred as Exchange Rate Risk. But when the inflow and the outflow of assets and liabilities as well as claims and counterclaims in a foreign currency are matched against each other, then there is no net exposure. In such a situation, there is no foreign exchange risk. So, while dealing in foreign currency there can be arise three types of Foreign Exchange Risk these are Transaction, Translation or

Consolidation Risk and Economic Risk. To minimize or eliminate the risk exposure, hedging is used. There are ranges of hedging instruments that can be used to reduce risk and the techniques are including Internal and External Techniques. External Techniques includes Money Market Hedging and derivatives Instrument which are explained in this unit with suitable numerical illustrations. Along with the techniques, there are four different strategies available for Exposure Management which includes Low Risk-Low Reward, Low Risk-Reasonable Reward, High Risk Low Reward and High Risk-High Reward which are also discussed under this unit.

8.7 Exercise

Theoretical Questions

1. Does foreign currency exchange hedging both reduce risk and increase expected value?

2. Explain, and list several arguments in favour of currency risk management and several against.

3. Explain the concept of money market hedge.

4. Explain the concept of forward market hedge.

5. What is the break-even reinvestment rate when comparing forward and money market alternatives?

Numerical Questions

1. Pacific Leather Goods Ltd. an Indian manufacturer exports leather goods to USA. The company is exporting 5000 units at a price of $60. The company has imported some specialty chemicals from Europe to produce the export items. The cost of chemicals per unit of leather good stands at Euro 10. The fixed overhead cost per unit comes at Rs. 250 and other variable overheads, including the freight cost, add up to Rs. 1250 per unit. The payments for both exports and imports are due in six months. The current exchange rate are as follows :

   Rs./$ 46.90

   Rs./Euro 40.40

   After six months (at the time of settlement of payments) the exchange rate turns out as follows :

Rs./$ 47.90

Rs./Euro 41.25

You are required to :

(i) Calculate the loss/gain due to transaction exposure.

(ii) Based on the following additional information calculate the losses/ gains due to transaction and operating exposure if the contracted export price per unit is Rs. 2700 :

   (a) The current exchange rate changes to Rs./$: 47.50 and Rs./Euro : 40.80

   (b) Price elasticity of demand for the company's product in the USA is estimated to be 1.60.

   (c) The payments are to be settled at the end of sixth month.

2. ZPS Co, whose home currency is the dollar, took out a fixed-interest peso bank loan several years ago when peso interest rates were relatively cheap compared to dollar interest rates. ZPS Co does not have any income in pesos. Economic difficulties have now increased peso interest rates while dollar interest rates have remained relatively stable. ZPS Co must pay interest on the dates set by the bank. A payment of 5,000,000 pesos is due in six months' time. The following information is available :

Spot rate 12·500–12·582 pesos per $

Six-month forward rate 12·805–12·889 pesos per $

Interest rates which can be used by ZPS Co:

	Borrow	Deposit
Peso interest rates	10·0%	7·5%
Dollar interest rates	4·5%	3·5%

What is the dollar cost of a forward market hedge?

3. An investor plans to exchange $1,000 into euros now, invest the resulting euros for 12 months, and then exchange the euros back into dollars at the end of the 12-month period. The spot exchange rate is €1·415 per $1 and the euro interest rate is 2% per year. The dollar interest rate is 1·8% per year. Compared to making a dollar investment for 12 months, at what 12-month forward exchange rate will the investor make neither a loss nor a gain?

Suggested Readings

1. Apte, P.G., International Finance, Tata McGraw Hill.

2. Choi, Fredrick, D., Meek, G. K., International Accounting, Person.

3. Doupnik, T. S., Perera, H., International Accounting, McGraw-Hill international edition.

4. Das Mohapatra, A. K. International Accounting, Eastern Economy Edition, PHI Learning Private Limited, New Delhi, Second Edn., 2012.

5. Frederick D.S. Choi & Gary K. Meek, International Accounting, Pearson Education, New Delhi, Fifth Edn., 2005

6. Levi, M. D., International Fiance, Routledge.

7. R. Srivastrava, International Finance, Oxford University Press.

8. Rathore, S. International Accounting, PHI Learning Private Limited, New Delhi.

9. Shapiro, A. C., Multinational Financial Mangement, Wiley.

10. Saudagaran, S. M. International Accounting, A User Perspective, Taxman India, New Delhi.