UNIT 7: DERIVATIVE

UNIT STRUCTURE

7.1 Learning objectives

7.2 Meaning of Derivatives

7.3 Types of Derivatives

7.4 Traders in Derivatives Market

7.5 Foreign Exchange Market: Meaning and Scope

7.6 Dealers in Foreign Exchange Market

7.7 Exchange Rate

7.8 Let us Sum Up

7.9 Further Readings

7.10 Answer to Check your progress

7.11 Model Questions

7.1 LEARNING OBJECTIVES

After going through this unit you will be able to

- explain the meaning of derivative, advantages and disadvantages
- explain the different types of derivatives
- discuss the current scenario of derivatives market in India
- explain about forex market
- discuss the structure of foreign exchange market.

7.2 MEANING OF DERIVATIVES

The word 'derivative' originates from mathematics and refers to a variable, which means derived from another variable. A derivative could be defined as a financial instrument whose value depends on the values of an underlying asset. The variables underlying derivatives are the prices of traded assets. For e.g. price of a stock (share), price of commodities like wheat, rice, pulses, interest rates, currency prices etc. Derivatives do not have value of their own. In finance the word derivative is used to mean a contract between dealers of financial assets where value is derived from

the value of the underlying assets that is any financial assets.

The financial assets are dealt in financial market. The prices of financial assets like shares, stock, bonds, foreign currency, interest rate of loans etc. are always keeps on changing. It creates uncertainty regarding future prices of financial assets and parties involved are also exposed to market risk. To avoid such risk/ uncertainty from fluctuation in prices of financial assets parties in financial market entered into a contract which is known as derivative. For example investor may purchase shares with the intention of increasing the share prices but in reality share prices may decline. Uncertainty is involved in future price of shares which exposed investors towards risk. Again Importer and exporter also face similar kind of risk. An importer while importing goods from other country may face problem in the time of payment of foreign currency when payment is due. As foreign currency exchange rates keeps on fluctuating the importer may have to pay more Indian rupee for purchase of necessary foreign currency if the value of that particular foreign currency appreciates. Similarly the exporter is also exposed to similar kind of risk and may receive less Indian rupee after due time if the value of foreign currency depreciates. The importer and exporter would like to protect the risk that arises due to fluctuation in foreign currency which can be avoided through derivatives. Financial derivative is a contract between dealers of financial assets. Here the value is derived from the value of the underlying assets i,e; assets dealt in the financial market like share or foreign currency. The most common underlying assets include stocks, bonds, commodities, currencies, interest rates and market indexes. Dealers entered into a contract to protect themselves or hedge the risk that may arise from the changes in the value of the financial assets. It is one kind of instrument for the management of the risk that arise due to uncertainity prevailing in the financial market. The importance of derivative is increasing day by day because of high volatility in market.

Financial derivative are designed to protect dealers of financial market from the adverse movement of prices of financial assets in future. With the help of financial derivative dealers can easily deal in financial

assets in future at predetermined agreed rate. Financial derivative 'lock in' the price of a particular financial asset for a future date. It effectively protects them from future uncertainities.

The main advantages of derivatives are:

- Risk Management: It is a risk management tool for the dealers of financial market. They can protect the future uncertainties that arise in the financial market due to fluctuation in market.
- High Profit: The ability and chances to make huge and extreme profits is high in derivatives than primary securities or mutual funds.

Disadvantages of derivatives

A disadvantage of financial derivative is the possibility of loss of money. While financial derivatives help increase profits and reduces risks it may also lead to lose out a lot of money or other assets. For example a cotton farmer enters into a contract with a weaver. Both the parties need the cotton as a resource to continue in their business. Thus, they can enter into a contract for the benefit of both of them. The cotton producer may agree on a fixed price to sell the cotton to the weaver on harvest time. This ensures a fixed income and a sure customer for the cotton farmer. On the other hand, the weaver is also ensured of a supply of cotton. This agreement could be a disadvantage when the price of cotton fluctuates. If the price of cotton goes up, the farmer would still have to sell the cotton at the earlier agreed cost. This makes the farmer lose out on the profit. Price fluctuations on the cotton could affect the weaver too. If the price of cotton goes down, he still has to pay the high cost that was agreed in the contract, regardless of the decrease in cotton's price or value.

Features of Derivative Market

a. Derivatives, by themselves, have no independent value. Their value is derived out of the underlying instruments.
b. Derivative contract have a specific lifespan or fixed expiry date.
c. A derivative requires little or no initial investment because it is an investment in a change in value rather than an investment in the actual asset or liability.
d. Derivatives enable price discovery, improve the liquidity of the underlying asset, serve as effective hedge instruments and offer better

ways of raising money.

e. Generally the parties to the contract, the counterparties, are not required to actually deliver an asset that is associated with the underlying.



CHECK YOUR PROGRESS

Q 1: What is derivative?

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7.3 TYPES OF DERIVATIVES

The most commonly used derivatives contracts are forwards, futures, options and swap. Here we take a brief look at various derivatives contracts that have come to be used.

Forward: It is the simple and most old form of derivative. Here a contract is made between parties to sell something in future at today's rate. Here price is agreed at present rate but actual deal takes place at future. On the day of the contract time of delivery of the asset, quality and quantity of the asset is fixed. Simply it can be said that here contract is initiated in one time but actual execution takes place at a later date.

Forward contracts are informal and it is not traded in exchange thus it is also known as Over – the- counter derivative (OTC). These types of contracts are actually some commitment between two parties. The assets which are traded in forward contracts include commodities like grain, precious metals, electricity, vehicle etc. For example: A farmer is growing 500 tons of wheat . Now, he could sell his wheat next year at that time rate or he could fix the price now by selling it through forward contract. Forward contract binds farmer to sell 500 tons of wheat after the harvest for a fixed price. By locking the price, the farmer eliminates the risk of falling wheat prices in the future. But on the other hand, if prices rise later, the farmer will get that price only what contract fixes.

Future: A future contract is very similar to a forward contract. The main similarity is that in both of the contract actual deal is executed at a

future date but the rate is pre determined. However, futures contracts are listed on the exchange. Exchange act as intermediary between dealers. Hence, future contracts are of standard nature and the agreement cannot be modified in any way. Exchange contracts come in a pre-decided format, pre-decided sizes and have pre-decided expirations. Also, since these contracts are traded on the exchange they have to follow a daily settlement procedure. An important point that needs to be mentioned is that in case of a future contract, the buyer and seller do not enter into an agreement with one another. Rather both of them enter into an agreement with the exchange.

Forwards and futures are similar type of financial contracts but there exist some differences. The main difference between futures and forward contracts is that futures are standardized contracts which are traded on an exchange. While forwards are some private transactions which are traded over - the - counter.

Differences between future and forward contract

Following are the main point of differences between future and forward contracts :

	Forward	Future
1	Forward Contract is an agreement between parties to buy and sell the underlying asset at a specified date and agreed rate in future.	A contract in which the parties agree to exchange the asset for cash at a fixed price and at a future specified date, is known as future contract
2	It is a tailor made contract.	It is a standardized contract.
3	It is an over the counter contract, i.e. there is no secondary market.	It is an exchange traded contract.
4	In forward contract Risk is high.	In future contract Risk is low.
5	It is a Self regulated Contract	It is regulated by stock exchange
6	Contracts are settled on maturity date	Contracts are settled on daily basis.

Option: An Option contract provides choices to the parties to buy/ sell the assets at a predetermined price before predetermined time. But

unlike forward and future, parties are not under obligation to buy or sell the assets. Parties can exercise their right or may not, thus it is known as option contract. For exercising right the purchasing party must have to bear a cost which is known as premium. Options can be traded in both OTC market and exchange traded markets.

Options can be of two types - call and put. Call option provides a right to buy the asset at a given price within a pre determined date. The seller is under obligation to sell the asset to the buyer if the buyer wants to exercise the right. A put option gives the right to sell the asset at a given price by a specified date. The buyer is under obligation to buy the asset from the seller at the price specified in the contract. The price listed in the contract is called the “strike price”. If the parties do not exercise their rights within the specified time period then remain ‘unexercised’

Options contracts are often used in securities, commodities and real estate transactions. Options help to make profit from changes in share prices without putting down the full price of the share. It can also be used to protect from fluctuations in the price of a share by enabling parties to buy or sell the shares at a pre-determined price for a specified period of time. Though it has advantages but trading in options is not so easy like trading in regular shares.

Swap: Swaps are financial agreements to exchange a series of cash flows between two parties. Here one party agrees to pay fixed interest payments on a predetermined date and the other party agrees to return interest payments that float with the underlying assets. Swaps are used in interest rates, stock indices, foreign currency exchange rates and even commodities prices.

The mechanism of swap is different from other form of derivative contract like forward , future and option. Forward, future and option will have one trade at the end of the contract but the swap will have multiple exchanges during the life of the contract. Unlike future and option this swap contracts are not traded on exchanges thus not regulated. So it involve a higher default risk then exchange traded contract.

One of the party will make a fixed series of payments based on the swap

agreement, but the other party will make payment on floating rate on the basis of the underlying assets like foreign currency exchange rate etc.

Types of Swap:

Swaps are generally of the following types:

- An interest rate swap is an agreement between two parties where floating interest rate is exchanged for fixed interest rate. This type of contract allow two parties to exchange fixed and floating cash flows on an interest-bearing investment or loan. One party makes payment on fixed rate which is pre determined at the time of the contract and the other party makes payment on future rate that is floating rate. Simply it is an agreement to exchange a series of cash flows.
- A currency swap is an agreement to make a currency exchange between two parties. Here cash flows in one currency are exchanged for cash flows in another currency.

  Interest rate swaps and currency swaps are the most popular swap contracts, which are traded over the counters between financial institutions.



CHECK YOUR PROGRESS

Q 2: What are the different forms of derivatives?

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Q 3: Define option contract.

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Q 4: What is swap?

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7.4 TRADERS IN THE DERIVATIVE MARKET

Following three types of traders operates in derivative market:

Hedgers: Hedger is someone who faces risk associated with price movement of an asset and who uses derivatives as a means of reducing that risk. Hedgers enter into a derivative contract to cover risk associated with the business deal. For example farmer growing paddy is not sure about the price he would get during harvest season. Similarly a rice mill is not sure about the price at which it may have to procure the rice in future. Both the farmer and the rice meal owner would enter into a forward contract where the farmer agrees to sell his paddy to the rice mill at a predetermined price. The farmer is expecting a price fall during harvest season and the rice meal is expecting a price rise. Hence both the parties face price risk. The forward contract in which they have entered into would eliminate the price risk for both the parties. This is called as hedging and the participants are called as hedgers.

Speculators: While hedgers enter in to derivative contract for reducing risk, Speculators enter into a derivative contract to make profits. The speculators have an independent view of future price behavior of the underlined asset and take appropriate position in derivatives with the intention of making profit later. Speculators render liquidity to the market and make markets competitive and expand the market size.

Arbitrageurs : Arbitrageurs are persons who simultaneously enter into transactions in two or more markets to take advantage of price discrepancy between both the markets. The markets could be physical market and the commodity exchange. Arbitrageurs constantly monitor the prices of different assets in different markets and identify opportunities to make profit that emanate from mispricing of products in the different markets. For example if the share price of Tata is Rs. 1550/- in National Stock Exchange and Rs. 1570/- in Bombay Stock Exchange the arbitrageurs will buy at NSE and sell at BSE simultaneously and pocket the difference of Rs. 20/- per share.

7.5 FOREIGN EXCHANGE MARKET: MEANING AND SCOPE

The foreign exchange market is a market in which currencies are bought and sold against each other. In other words, foreign exchange market is the market where the currency of one country is exchanged for the currency of another country. The market is an over the counter market. There is no single market place or an organized exchange (like a stock exchange) where traders meet and exchange currencies. According to Kindelberger, "Foreign exchange market is a place where foreign money are bought and sold."

Foreign exchange market is the largest financial market. Foreign exchange markets were primarily developed to facilitate settlement of debts arising out of international trade. The largest foreign exchange market is London followed by New York, Tokyo, Zurich and Frankfurt. The markets are situated throughout the different time zones of the globe in such a way that when one market is closing the other is beginning its operations. Thus at any point of time one market or the other is open. Therefore, it is stated that foreign exchange market is functioning throughout 24 hours of the day. In India, the market is open for the time the banks are open for their regular banking business. No transactions take place on Saturdays.

There are two foreign exchange markets. Viz. the retail market and the wholesale market

In the retail foreign exchange market, Retail traders buy or sell currency for their genuine business/personal requirements. Individuals like tourists, foreign students, patients traveling to other countries for medical treatment; small companies, small exporters and importers operate in the retail foreign exchange market. Money transfer companies are also major players in the retail market. The wholesale foreign exchange market is also called the inter-bank market. In the wholesale market Commercial banks are the market makers. This market serves to smoothen the excessive

purchases or sales made by individual banks.

Functions of Foreign Exchange Market

The foreign exchange market performs the following three functions:

a) Transfer function: The foreign exchange market transfer purchasing power between two countries. It is the primary function of this market. Various instruments such as telegraphic transfers, bank drafts and foreign bills are used for transferring the purchasing power.

b) Credit function: Another function of foreign exchange market is provide credit for promotion of foreign trade. Foreign exchange market provide credit by discounting bills of exchange arising out of foreign trade. Bills of exchange, with maturity period of three months, are generally used for international payments. Credit is required for this period in order to enable the importer to take possession of goods, sell them and obtain money to pay off the bill.

c) Hedging function: The third function of foreign exchange market is to hedge foreign exchange risk. The exchange rates (price of one currency expressed in another currency) under free market situation can go up and down. Under this condition, a person or a firm undertakes a great exchange risk if there are huge amounts of net claims or net liabilities which are to be met in foreign currency. Through hedging, the foreign exchange market tries to protect the interest of the persons dealing in the market from any such unforeseen changes in the exchange rate.

7.6 DEALERS IN FOREIGN EXCHANGE MARKET

Following are the important dealers of foreign exchange market in India:

1. **Banks:** Commercial banks operate in the foreign exchange market either at retail level for individual exporters and corporations or at wholesale level in the interbank market. The banks dealing in foreign exchange maintain substantial foreign currency balances to serve the need of the customers. These banks discount and sell foreign bills of exchange, issue bank draft, make transfer etc.
2. **Central Bank:** Central banks of the country intervene in the foreign

exchange market in order to maintain the exchange rate within a certain range. The central banks also execute the policies of the government.

3. **Brokers:** In the foreign exchange market banks do not deal directly with each other. The brokers bring together the buyers and sellers of foreign exchange. If a bank wants to buy or sell foreign exchange, it informs the broker the amount. If the broker succeeds in carrying out the transaction, he receives a commission from the selling bank.
4. **Acceptance Houses:** Acceptance houses also operate in foreign exchange market. They accept bills on behalf of their customers and helps in foreign remittance.



CHECK YOUR PROGRESS

Q 5: Mention two functions of foreign exchange market.

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Q 6: Name the dealers of foreign exchange market.

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7.7 EXCHANGE RATE

The rate of exchange is the price of one currency stated in terms of another currency i.e. the rate at which one currency is exchanged for another. The rate of exchange expresses the external purchasing power of a home currency. E.g.- If one US dollar can be exchange for 60 Indian Rupees, than the rate of exchange is 1US $ = Rs.60 or Rs.1=1/60 US $=0.017 $. In a foreign exchange market, there exist different types of exchange rates. Following are the some major exchange rates:

1. **Spot Rate:** A spot foreign exchange rate is the rate of a foreign exchange contract (buying and selling of foreign exchange) for immediate delivery. This rate is also known as cable rate or telegraphic transfer rate. The spot rate is quoted differently for buyers and sellers.

For example, $1=60.31 for buyers and $1=Rs60.15 for the seller. This difference arises because of transportation charges, dealer's commission, insurance etc. These costs are to be borne by the buyers.

2. **Forward Rate:** Forward rates are exchange rates for currency exchanges that will occur at a future date. The forward exchange rate is settled now but the actual exchange of foreign exchange take place in the future. Forward dates are typically 30, 90, 180 or 360 days in the future.
3. **Long Rate:** Long rate of exchange is the rate at which the banks purchase or sells foreign currency bills which are payable at a specific future date.

Exchange Rate Regime

There are two types of exchange rate systems; namely- Fixed exchange rate system and flexible exchange rate system.

Fixed exchange rate: Under fixed exchange rate system the rate of exchange between two or more countries does not vary or varies only within narrow limits. Under this system, the government or the Central Bank intervenes in the foreign exchange market so as to maintain the exchange rate stays close to an 'exchange rate target'. By intervening in the foreign exchange market, through the process of buying and selling foreign assets and currencies, Central Banks keep the exchange rate at the "target fixed level".

Advantages of Fixed Exchange Rate

- Exchange-rate stability promotes globalization –more trade and investment by making prices of goods involved in trade more predictable.
- Since there is no fear of currency fluctuations, fixed exchange rate creates confidence in the strength of the domestic currency and there is no fear of adverse effect of speculation on the exchange rate.
- Since uncertainty and risk of exchange rates volatility is rare in case of fixed exchange rate, hence it promote long-term capital flows.
- Fixed exchange rate serve as an anchor and imposes a discipline on monetary authorities

to follow responsible financial policies within countries.

Disadvantages of Fixed Exchange Rate

- Fixed exchange rate may achieve exchange rate stability but at the expense of domestic economic stability.
- In fixed exchange rate system, country needs to have significant foreign exchange reserves and this imposes heavy burden on the monetary authorities for managing foreign exchange reserves.
- Monetary authorities lose the independence of monetary policy formulation to maintain exchange rate stability.

Flexible exchange rate: In flexible exchange rate system value, of one currency in terms of another is determined through the forces of demand and supply. Under the flexible exchange rate system, the rate of exchange is allowed to vary to suit the economic policies of the government. There are no restrictions on buying and selling of foreign exchange and the exchange rates are free to change according to the change in the demand and supply of foreign exchange. A currency that uses a floating exchange rate is known as a floating currency.

Advantages of Flexible Exchange Rate

- The fundamental argument in favour floating exchange rate system is that it allows country's autonomy with respect to their use of monetary, fiscal and other policy instruments and at the same time external equilibrium is ensured because of flexible exchange rate.
- Floating exchange rates gives the government and monetary authorities' flexibility in determining interest rates. This is because interest rates do not have to be set to keep the value of the exchange rate within pre-determined bands.
- Balance of Payments on current account disequilibrium can automatically be restored to equilibrium floating exchange rate regime and the scarcity or surplus of any currency is eliminated under floating exchange rate regime.



CHECK YOUR PROGRESS

Q 7: What is meant by exchange rate?

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7.8 LET US SUM UP

In this unit we have discussed the following points:

- A derivative could be defined as a financial instrument whose value depends on the values of an underlying asset. The variables underlying derivatives are the prices of traded assets. For e.g. price of a stock.
- The most commonly used derivatives contracts are forwards, futures, options and swap.
- Forward contracts are informal and it is not traded in exchange thus it is also known as Over – the- counter derivative (OTC).
- Options can be of two types - call and put. Call option provides a right to buy the asset at a given price within a pre determined date. A put option gives the right to sell the asset at a given price by a specified date.
- Foreign exchange market is the market where the currency of one country is exchanged for the currency of another country. The market is an over the counter market.
- The rate of exchange is the price of one currency stated in terms of another currency i.e. the rate at which one currency is exchanged for another.



7.9 FURTHER READINGS

1) Batra G.S. (2002). Financial services and markets. New Delhi, Deepand Deep Publication Pvt. Ltd.

2) Mishkin,Frederic S. (2007) Financial Markets and Institutions. New Delhi, Pearson Education Ltd.

3) Srivastava, R.M. (2009). Management of Indian financial institutions. New Delhi, Himalaya Publishing House.

4) Khan, M. Y. (2007). Indian Financial System. New Delhi. Tata McGraw Hill.

5) Pathak, Bharati V (2006). The Indian Financial System : Markets, institutions and services. New Delhi, Pearson Education Ltd.



7.10 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: A derivative could be defined as a financial instrument whose value depends on the values of an underlying asset.

Ans to Q No 2: The most commonly used derivatives contracts are forwards, futures, options and swap.

Ans to Q No 3: An Option contract provides choices to the parties to buy/ sell the assets at a predetermined price before predetermined time.

Ans to Q No 4: Swaps are financial agreements to exchange a series of cash flows between two parties.

Ans to Q No 5: Two functions performed by foreign exchange market are transfer purchasing power between two countries and to provide credit for promotion of foreign trade.

Ans to Q No 6: Important dealers of foreign exchange market are banks, central bank, brokers and acceptance houses.

Ans to Q No 7: The rate of exchange is the price of one currency stated in terms of another currency i.e. the rate at which one currency is exchanged for another.



7.11 MODEL QUESTIONS

Q 1: What is derivative? Discuss the different types of derivative.

Q 2: Mention the features of derivative market.

Q 3: What is foreign exchange market? Discuss the participants of foreign exchange market.

Q 4: What is meant by exchange rate? Discuss the different types of exchange rates.

Q 5: Discuss the fixed exchange rate system.

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