



# Derivatives Market in India - Futures and Options

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**Abstract:** Derivatives are risk management instruments, which derive their value from an underlying asset. The underlying asset can be index, share, bonds, currency, and interest etc. Banks, securities firms, companies and investors to hedge risks to gain access to cheaper money and to make profit by using derivatives. Derivatives are likely to grow even at a faster rate in future. Financial derivatives enable parties to trade specific financial risks (such as interest rate risk, currency, equity and commodity price risk, and credit risk, etc.) to other entities who are more willing, or better suited, to take or manage these risks—typically, but not always, without trading in a primary asset or commodity. The risk embodied in a derivatives contract can be traded either by trading the contract itself, such as with options, or by creating a new contract which embodies risk characteristics that match, in a countervailing manner, those of the existing contract owned. This paper aims to know the various contracts, instruments in derivatives market for investment to the investors.

**Keywords:** Derivative, Futures, Options, Bermudan

## Introduction:

The emergence of the market for derivatives products, most notably forwards, futures and options, can be traced back to the willingness of risk-averse economic agents to guard themselves against uncertainties arising out of fluctuations in asset prices. By their very nature, the financial markets are marked by a very high degree of volatility. Through the use of derivative products, it is possible to partially or fully transfer price risks by locking-in asset prices. As instruments of risk management, these generally do not influence the fluctuations in the underlying asset prices. However, by locking-in asset prices, derivative product minimizes the impact of fluctuations in asset prices on the profitability and cash flow situation of risk averse investors.

A derivative instrument is a contract between two parties that specifies conditions (especially the dates, resulting values of the underlying variables and notional amounts) under which payments are to be made between the parties.

**Literature Review:**

**Ashutosh Vashishtha and Satish Kumar (2010)** conducted a case study on Development of Financial Derivatives Market in India. In this study they focused conceptual framework of derivatives. This study helps to know the Derivatives Products Traded in Derivatives Segment of BSE and NSE and its turnover, number of contracts and average daily transactions of index and stock futures and index and stock options. The derivatives turnover on the NSE has surpassed the equity market turnover. Significantly, its growth in the recent years has surpassed the growth of its counterpart globally.

**Mohammed Rubani (2017)** has focused on the evolution of capital market in India, assessment of performance of derivative market in India and factors contributing towards the growth of Derivative Market. The market determined exchange rates and interest rates also created volatility and instability in portfolio values and securities prices and hedging activities through various derivatives emerged to different risks.

**Toopalli Sirisha and Dr. NallaBala Kalyan (2019)** in this paper objective is to investigate the effect on the underlying market volatility of financial derivatives with respect to futures and options. It helps the investors to construct a diversified portfolio, suggests investors about investment in futures, options, and swaps and it is used to know the risk management in derivatives. In the study stock futures, stock call and put options of Tata Consultancy Services are analyzed. From the study it is found that derivatives will minimize the risk occurred in the stock market. In options investor get profits by using a call or put option. From the study we come to know that options give more returns and less risk compared to futures.

**Dr T.V.S.Swathi and M. V. Sai Priya (2021)** this paper aims to study futures and options by considering a company derivative from Indian stock market and suggesting the best possible ways to investors to gain more profits in derivative markets. From the study it is found that derivatives will mitigate the risk arises in the stock market. In futures investor cover the loss occurred in near month contract by using mid-month contract. Options will give more growth to the investors over the future and investor can use margin of safety and know where to buy and sell the stocks.

**Statement of the Problem:**

Difficult to find best security, people want to more return at same time risk should be less. Therefore, study aim is to understand derivatives with special reference to futures and options. And getting the value of derivatives is very difficult in valuation of derivatives tools are very much complicated but we can take decision.

**Objectives of the Study:**

1. To study the concept of derivatives market in India.

## Concept of Derivatives

Derivatives are broad set of instruments whose value depends on some underlying assets. The value is derived from underlying financial or physical assets. It is a financial instrument which derives its value/price from the underlying assets.

“A contract which derived its value from price or index of prices at underlying securities.”

-Securities Contracts (Regulation) Act 1956

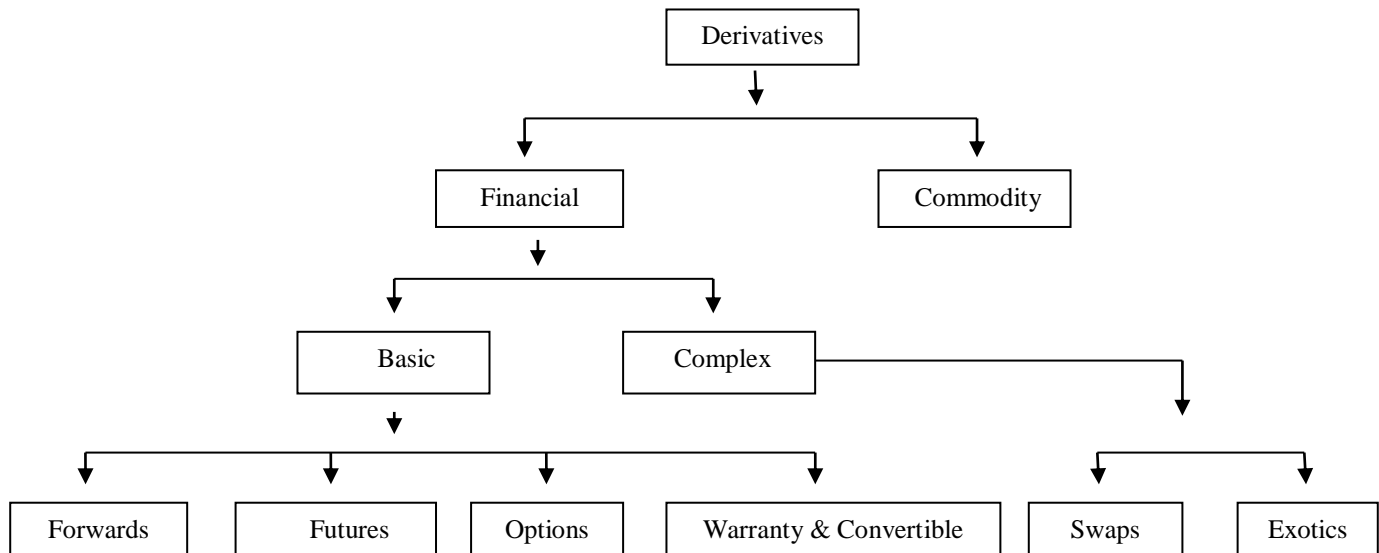
## Features of Financial Derivatives

1. It is a contract:
2. Derives value from underlying asset:
3. Specified obligation:
4. Direct or exchange traded:
5. Related to notional amount:
6. Delivery of underlying asset not involved:
7. May be used as deferred delivery:
8. Secondary market instruments:
9. Exposure to risk:

## FUNCTIONS OF DERIVATIVES

- 1) Discovery of price
- 2) Risk transfer
- 3) Enhances liquidity
- 4) Increases savings and investment
- 5) Brings perception in market
- 6) Encourages entrepreneurship or competition

## TYPES OF DERIVATIVES



### Forward Contract

A forward contract is a customized contract between two parties where settlement takes place on a specific date in future at today's pre agreed price.

### Features of Forward Contract

1. Bilateral
2. Customized contracts
3. Long and short positions
4. It is specified terms of contract
5. Mutual obligation
6. No initial investment
7. It removes uncertainty of price
8. Counter party risk
9. Illiquidity

### Futures Contract

Future contract is standardized agreement between the parties to exchange and underlined assets at a predetermined price on a specific date in future.

### Features of Future Contract:

#### ➤ It is a contract:

Future contract is an agreement between two parties of exchange an underlined asset through the exchange traded.

#### ➤ It removes uncertainly price:

When we are locked the price of a security because we are deciding today itself it leads to remove uncertainly of price.

➤ **It specified obligations:**

Future contract specified the obligation to purchase of an underlined asset is to receive the delivery of goods and make the payment where are obligation of seller is to give the delivery and receive the cash.

➤ **It is a standardized contract:**

- a) Exchange traded: Future contract are traded through the exchange traded and the party's requirement is not considered into contract because it is readymade contract.
- b) Quality & Quantity: Quality and quantity of underlined assets fixed in the future contract.
- c) Initial investment: Initial investment is a required for a trading underline security in the future contract.
- d) Daily settlement: It takes place in the future contract that is mark to mark or market to market.
- e) Maturity: Three future contract are available in India,
  - ✓ One month contract – Neat
  - ✓ Two-month contract – Next
  - ✓ Three-month contract – Far

➤ **No counter party risk:**

Clearing house keeps track of all transactions that take place in the exchange and becomes the formal counter party to every transaction. These agreement elements the problems of counter party risk.

➤ **Liquidity:**

Future contracts extremely liquid because, it is possible to unwind a contract at any time by performing a receiving trade.

**Types of Futures Contracts:**

**1. Interest rate futures:**

In this type the futures securities traded are interest bearing instruments like T-bills, bonds, debentures, euro dollar deposits and municipal bonds, notional gilt-contracts, short term deposit futures and Treasury note futures.

**2. Stock index futures:**

Here in this type contracts are based on stock market indices. For example, in US, Dow Jones Industrial Average, Standard and poor's 500 New York Stock Exchange Index. Other futures of this type include Japanese Nikkei index, TOPIX etc.

**3. Foreign currency futures:**

These future contracts trade in foreign currency generating used by exporters, importers, bankers, FIs and large companies.

**4. Bond index futures:**

These contracts are based on particular bond indices i.e., indices of bond prices. Municipal Bond Index futures based on Municipal Bonds are traded on CBOT (Chicago Board of Trade).

**5. Cost of living index future:**

These are based on inflation measured by CPI and WPI etc. These can be used to hedge against unanticipated inflationary pressure.

### Purpose of Trading Financial Future:

Financial futures are traded either to speculate on prices of securities or to hedge existing exposure to security price movements. **Speculators** in financial futures markets take positions to profit from expected changes in the price of futures contracts over time. They can be classified according to their methods. **Day traders** attempt to capitalize on price movements during a single day: normally, they close out their futures positions on the same day the positions were initiated. **Position traders** maintain their futures positions for longer periods of time. And thus, attempt to capitalize on expected price movements over a more extended time horizon. **Hedgers** take positions in financial futures to reduce their exposure to future movements in interest rates or stock price. Many hedgers who maintain large portfolios of stocks or bonds take a futures position to hedge their risk.

### Institutional Trading of Futures Contracts:

Summarizes how various types of financial institutional participate in futures markets. Financial institutions generally use futures contracts to reduce risk. Some commercial banks, savings institutions, bond mutual funds, pension funds, and insurance companies trade interest rate futures contracts to protect against a possible increase in interest rates, thereby insulating their long-term debt securities from interest rate risk.

Types of financial institution	Participation in Futures Markets
Commercial banks	Take positions in futures contracts to hedge against interest rate risk
Savings institutions	Take positions in futures contracts to hedge against interest rate risk.
Securities firms	Execute futures transactions for individual and firms. Take positions in futures contracts to hedge their own portfolios against stock market or interest rate movement.
Mutual funds	Take positions in futures contracts to speculate on future stock market or interest rate movements. Take positions in futures contracts to hedge their portfolios against stock market or interest rate movements.
Pension funds	Take positions in futures contracts to hedge their portfolios against stock market or interest rate movements.
Insurance companies	Take positions in futures contracts to hedge their portfolios against stock market or interest rate movements.

### Risk of Trading Futures Contracts:

- **Market risk:** Market risk refers to fluctuations in the value of the instruments as a result of market conditions firms that use futures contracts to speculate should be concerned about market risk. If their expectations about future market conditions are wrong, they may suffer losses on their futures contracts.
- **Basis risk:** A second type of risk is basis risk, or the risk that the position being hedged by the futures contracts is not affected in the same manner as the instrument underlying the futures contract.
- **Liquidity risk:** A third type of risk is liquidity risk, which refers to potential price distortions due to a lack of liquidity. For example, a firm may purchase a particular bond futures contract to speculate on expectations of rising bond prices.
- **Credit risk:** A fourth type of risk is credit risk, which is the risk that a loss will occur because a counter party defaults on contract. This type of risk exists for over-the-counter transactions, in which a firm or individual relies on the credit worthiness of counter party.
- **Prepayment risk:** It refers to the possibility that the assets to be hedged may be prepaid earlier than their designated maturity. Suppose that a commercial bank sells Treasury bond futures in order to hedge its holdings of corporate bonds and that just after the futures position is created the bonds are called by the corporation that initially issued them.
- **Operational risk:** A sixth type of risk is operational risk, which is the risk of losses as a result of inadequate management or controls. Firms that use futures contracts to hedge are exposed to the possibility that the employees responsible for their futures positions do not fully understand how values of specific futures contract will respond to market conditions.
- **Exposure of futures market to systemic risk:** To the extent that traders of financial futures contracts or other derivative securities are unable to cover their derivative contract obligations in over-the-counter transactions, they could cause financial problems for their respective counter parties.

### Options Contract

An option is the right but not obligation to buy or sell something on a specified date at a specified price. In the securities market an option is a contract between two parties to buy or sell a specified number of shares at a later date for an agreed price.

### Basic Terms used in Option Trading:

- ✓ **Contract:**  
It is a contract to buy or sell an underlying asset.
- ✓ **Parties:**  
There are two parties to the contract that is buyer (holder) of the contract and seller (writer) of the contract the writer guaranty to the option holder a right to buy or sell a particular asset.
- ✓ **Exercise price or strike price:**

The pre determine price at which the underlying assets may be sold or bought by the option holder.

✓ **Exercise date:**

The date on which option is exercise by option holder.

✓ **Expiration date or maturity date:**

The date on which the option expires or matures that is the maturity date of the contract.

✓ **Option premium:**

It is the price paid by the option holder to the option writer to acquire the write to buy or sell the underlying assets this is the consideration for the write paid at the time of formation of the contract.

### Option Styles:

a) **American style:**

An option that may be exercised on any trading day on/or before expiration. In other words, American option provides the holder to buy or sell an underlined asset which can be exercised at any time before or on the date of expire of the option.

b) **European style:**

In option that may only be exercised on expire date of the contract. In other words, European option can be exercised only on the date of expire or maturity.

c) **Bermudan style:**

An option that may be exercised only on specified dates on/or before expiration of the contract.

### Types of Option Contract

❖ **Call Option:**

Call Option is on option which grants the holder the right to buy an underlined asset at a specified date from the writer a particular quality of underlying assets on a specified price within a specified expiration maturity date.

❖ **Put Option:**

Put Option is an option contract where the holder as the right to sell an underlying asset to the writer of the option at a specified price on or before maturity dates.

### Option Strategies

1) **Pay off profit for the buyer of call option**

- a) Long call
- b) Short call

2) **Pay off profit for the buyer of put option**

- a) Long put
- b) Short put



## Models of Options

- Black-Scholes Option Pricing Model
- Binomial Option Pricing: One Time Period
- Binomial Option Pricing: Multiple Time Periods

### Difference between Futures and Options:

Futures Contract	Options Contract
1) Exchange traded with notation	1) Same as futures
2) Exchange defines the product	2) Same as futures
3) Price is zero, strike price move	3) Strike price is fixed price moves
4) Linear payoff	4) Nonlinear payoff
5) Both long and short at risk	5) Only short at risk

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