Chapter – III

Derivatives Market – A Review
CHAPTER – III

DERIVATIVES MARKET – A REVIEW

INTRODUCTION
Chapter - II, Materials and Methodology of the Study, which includes Universe, Sample, Data, Analysis, Operational Definitions, Statistical tools used, and the Chapter Scheme have been dealt with. In this chapter, Chapter - III, The Review of Literature and other concepts related to study area have been dealt with.

FINANCIAL SYSTEM
Economic growth and development of any country depends upon a well-knit financial system. Financial system comprises a set of sub-systems of financial institutions financial markets, financial instruments and services which help in the formation of capital. Thus a financial system provides a mechanism by which savings are transformed into investments and it can be said that financial system play an significant role in economic growth of the country by mobilizing surplus funds and utilizing them effectively for productive purpose.

The financial system is characterized by the presence of integrated, organized and regulated financial markets, and institutions that meet the short term and long term financial needs of both the household and corporate sector. Both financial markets and financial institutions play an important role in the financial system by rendering various financial services to the community. They operate in close combination with each other.

MEANING AND DEFINITION
The word "system", in the term "financial system", implies a set of complex and closely connected or interlined institutions, agents, practices, markets, transactions, claims, and liabilities in the economy. The financial system is concerned about money, credit and finance-the three terms are intimately related yet are somewhat different from each other.
The financial system is possibly the most important institutional and functional vehicle for economic transformation. Finance is a bridge between the present and the future and whether the mobilization of savings or their efficient, effective and equitable allocation for investment, it the access with which the financial system performs its functions that sets the pace for the achievement of broader national objectives.

According to Christy, the objective of the financial system is to “supply funds to various sectors and activities of the economy in ways that promote the fullest possible utilization of resources without the destabilizing consequence of price level changes or unnecessary interference with individual desires.”

According to Robinson, the primary function of the system is “to provide a link between savings and investment for the creation of new wealth and to permit portfolio adjustment in the composition of the existing wealth.

A financial system or financial sector functions as an intermediary and facilitates the flow of funds from the areas of surplus to the deficit. It is a composition of various institutions, markets, regulations and laws, practices, money manager analyst, transactions and claims and liabilities.  

FEATURES OF FINANCIAL SYSTEM
The features of a financial system are as follows

- Financial system provides an ideal linkage between depositors and investors, thus encouraging both savings and investments.
- Financial system facilitates expansion of financial markets over space and time.
• Financial system promotes efficient allocation of financial resources for socially desirable and economically productive purposes.
• Financial system influences both the quality and the pace of economic development. Financial markets and their economic functions.\(^0\)

**IMPORTANCE AND FUNCTIONS OF FINANCIAL SYSTEM**

Money and finance alone cannot lead to economic development. The financial system plays a significant role in bringing about economic development of any country. This is achieved by stimulating the accumulation of capital and by efficient allocation of it. In any economy, there are two groups of people, viz. savers and investors. Savers are those who’s current income exceeds current expenditure, while investors are those whose current income is less than the current expenditure. The function of financial system is to establish a bridge between savers and the investors and to facilitate the transformation of savings into investment.\(^3\)

**Promotion of liquidity**

The major function of financial system is the provision of money and monetary assets for the production of goods and services. There should not be any shortage of money for productive ventures. In financial language, the money and monetary assets are referred to as liquidity. The term liquidity refers to cash or money and other assets which can be converted into cash readily without loss of value and time.

**Link between savers and investors**

One of the important functions of financial system is to link the savers and investors and thereby help in mobilizing and allocating the savings effectively and efficiently. By acting as an efficient medium for allocation of resources, it permits continuous up gradation of technologies for promoting growth on a sustained basis.

**Information available**

It makes available price-related information which is a valuable assistance to those who need economic and financial decision.
Helps in projects selection

A financial system not only helps in selecting projects to be funded but also inspires the operators to monitor the performance of the investment. It provides a payment mechanism for the exchange of goods and services, and transfers economic resources through time and across geographic regions and industries.

Allocation of risk

One of most important function of the financial system is to achieve optimum allocation of risk bearing. It limits, pools, and trades the risks involved in mobilizing savings and allocating credit. An effective financial system aims at containing risk within acceptable limit and reducing cost of gathering and analyzing information to assist operators in taking decisions carefully.

Minimizes situations of Asymmetric information

A financial system minimizes situations where the information is Asymmetric and likely to affect motivations among operators or when one party has the information and the other party does not. It provides financial services such as insurance and pension and offers portfolio adjustments facilities.

Reduce cost of transaction and borrowing

A financial system helps in creation of financial structure that lowers the cost of transactions. This has a beneficial influence on the rate of return to the savers. It also reduces the cost of borrowings. Thus, the system generates an impulse among the people to save more.

Financial deepening and broadening

A well-functioning financial system helps in promoting the process of financial deepening and broadening. Financial deepening refers to an increase of financial assets as a percentage of the gross domestic product. Financial broadening refers to building an increasing number and a variety of participants and instruments.04
COMPONENTS / CONSTITUENTS OF FINANCIAL SYSTEM

The financial system consists of four segments or components. These are: Financial Institutions, Financial Markets, Financial Instruments, Financial Services.

Financial Institutions

Financial institutions are intermediaries that mobilize savings & facilitate the allocation of funds in an efficient manner. Financial institutions can be classified as banking & non-banking financial institutions. Banking institutions are creators of credit while non-banking financial institutions are purveyors of credit. While the liabilities of banks are part of the money supply, this may not be true of non-banking financial institutions. In India, non-banking financial institutions, namely, the developmental financial institutions (DFIs) & non-banking financial companies (NBFCs) as well as housing finance companies (HFCs) are the major institutional purveyors of credit. Financial institutions can also be classified as term-finance institutions such as the industrial development bank of India (IDBI), industrial credit & Investment Corporation of India (ICICI), industrial financial corporation of India (IFCI), small industries development bank of India (SIDBI) & industrial investment bank of India (IIBI).

FIGURE – 02
COMPONENTS/ CONSTITUENTS OF FINANCIAL SYSTEM

Source: http://www.indianmba.com/Faculty_Column/FC1063/fc1063.html, accessed on 19.11.2013 at 00.08 Hrs.
Financial Markets

Financial markets are a mechanism enabling participants to deal in financial claims. The markets also provide a facility in which their demands & requirements interact to set a price for such claims. The main organized financial markets in India are the money market & capital market. The first is a market for short-term securities. Money market is a market for dealing with financial assets & securities which have a maturity period of up to one year. It consists of, Call money market, Commercial bills market, Treasury bills market, Short-term loan market. While the second is a market for long term securities, that is, securities having a maturity period of one year or more. The capital market is a market for financial assets which have a long or indefinite maturity. It consists of Industrial securities market, Government securities market, Long-term loans market.

Financial Instruments

Financial instruments refer to those documents which represents financial claims on assets. As discussed earlier, financial assets refers to a claim to the repayment of certain sum of money at the end of specified period together with interest or dividend. E.g bills of exchange, promissory notes, treasury bills, government bonds, deposit receipts, shares debentures etc. Financial instruments can also be called financial securities. Financial securities can be classified into, Primary or direct securities and Secondary or indirect securities. Again these securities may be classified on the basis of duration i.e. Short-term securities, Medium-term securities and Long-term securities Primary securities are securities directly issued by the ultimate investors to the ultimate savers. Examples, shares and debentures issued directly to the public. Secondary securities are securities issued by some intermediaries called financial intermediaries to the ultimate savers. E.g. unit trust of India and Mutual funds issue securities in the form of units to the public and money pooled is invested in companies. Short-term securities are those which mature within a period of one year. E.g. Bills of exchange, treasury bills, etc. Medium-term securities are those which have a maturity period ranging between one and five years. e.g. Debentures maturing within a period of 5 years. Long-term securities are those which have a maturity period of more than five years. E.g. government Bonds maturing after 10 years.
Financial Services

Financial intermediaries provide key financial services such as merchant banking, leasing hire purchases, credit-rating, and so on. Financial services rendered by the financial intermediaries’ bridge the gap between lack of knowledge on the part of investors and increasing sophistication of financial instruments and markets. These financial services are vital for creation of firms, industrial expansion, and economic growth. Before investors lend money, they need to be reassured that it is safe to exchange securities for funds. This reassurance is provided by the financial regulator, who regulates the conduct of the market, and intermediaries to protect the investors’ interests. The Reserve Bank of India regulates the money market and Securities Exchange Board of India (SEBI) regulates capital market.

FINANCIAL MARKETS

Financial markets refer to institutional arrangements for dealing in financial assets, claims or securities. In other words, financial markets refers to credit markets for meeting the long-term and short-term credit needs of individuals, firms and corporate enterprises. In short, financial markets are arrangements for the buying and selling of financial assets or securities.

It deals about the raising of finance by various institutions through the issue of various securities. Every business concern requires two types of finance. They are Short-term or working capital requirements are raised or borrowed in the money market through the issue of different securities such as bills, promissory notes, etc., Even the Government raises the short-term funds through the issue of treasury bills. Banks play a vital role in providing short-term funds. The long term funds or fixed capital are raised by companies by the issue of shares, debentures and bonds in the capital markets.
Capital Market comprises the complex of institutions and mechanisms through which intermediate term funds and long-term funds are pooled and made available to business, government and individuals. The Capital Market also encompasses the process by which securities already outstanding are transferred. The Securities Market, however, refers to the markets for those financial instruments/claims/obligations that are commonly and readily transferable by sale. The Securities Market has two interdependent and inseparable segments, the new issues (primary) market and the stock (secondary) market.

The Primary market provides the channel for sale of new securities. The issuer of securities sells the securities in the primary market to raise funds for investment and/or to discharge some obligation. The Secondary market deals in securities previously issued. The secondary market enables those who hold securities to adjust their holdings in response to changes in their assessment of risk and return. They also sell securities for cash to meet their liquidity needs. The price signals, which subsume all information about the issuer and his business including associated risk, generated in the secondary market, help the primary market in allocation of funds.

First, the spot market (Equity market) where securities are traded for immediate delivery and payment. Second derivative market where the securities are traded for...
future delivery and payment (i.e., Forward market in the earlier stage). This forward market is further divided into Futures and Options Market (Derivatives Markets). In futures Market the securities are traded for conditional future delivery whereas in option market, two types of options are traded. A put option gives right but not an obligation to the owner to sell a security to the writer of the option at a predetermined price before a certain date, while a call option gives right but not an obligation to the buyer to purchase a security from the writer of the option at a particular price before a certain date.  

DERIVATIVES MARKET

The derivatives market is the financial market for derivatives, financial instruments like futures contracts or options, which are derived from other forms of assets. The market can be divided into two, that for exchange-traded derivatives and that for over-the-counter derivatives. The legal nature of these products is very different, as well as the way they are traded, though many market participants are active in both.

Derivative is a product whose value is derived from the value of one or more basic variables, called bases (underlying asset, index, or reference rate), in a contractual manner. The underlying asset can be equity, forex, commodity or any other asset. For example, wheat farmers may wish to sell their harvest at a future date to eliminate the risk of a change in prices by that date. Such a transaction is an example of a derivative. The price of this derivative is driven by the spot price of wheat which is the “underlying”.

In the Indian context the Securities Contracts (Regulation) Act, 1956 (SC(R)A) defines “derivative” to include –

- A security derived from a debt instrument, share, loan whether secured or unsecured, risk instrument or contract for differences or any other form of security.
- A contract, which derives its value from the prices, or index of prices, of underlying securities.

Derivatives are securities under the SC(R)A and hence the trading of derivatives is governed by the regulatory framework under the SC(R)A.
According to the L.C. Gupta Committee, “Derivatives means forward, futures, or option contract of predetermined fixed duration, linked for the purpose of contract fulfillment to the value of specified real or financial assets or to an index security.”

Accounting standard SFAS 133 defines a derivative thus:

A derivative instrument is a financial instrument or other contract with all three of the following characteristics:

a. It has (1) one or more underlyings, and (2) one or more notional amounts or payment provisions or both. Those terms determine the amount of the settlement or settlements... and in some cases, whether or not a settlement is required.

b. It requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors.

c. Its terms require or permit net settlement, it can readily be settled net by a means outside the contract, or it provides for delivery of an asset that puts the recipient in a position not substantially different from net settlement.

**EMERGENCE OF COMPLEX FINANCIAL PRODUCTS**

In recent years, complex financial products such as asset-backed securities, derivatives, credit-default swaps (CDSs) and collateralized debt obligations (CDOs) have proliferated in developed countries. These products have become highly popular with banks and financial institutions as they allow them to hedge their risks and manage their regulatory and economic capital more efficiently.

Although various structured products have enabled the transfer of risks and enhanced the liquidity of instruments, the recent turmoil in the US sub-prime mortgage market and related developments connected with complex derivatives have also brought to the fore the risks posed by these instruments.

The emergence of the market for derivative 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,
derivatives generally do not influence the fluctuations in the underlying asset prices. However, by locking-in asset prices, derivative products minimize the impact of fluctuations in asset prices on the profitability and cash flow situation of risk-averse investors.

Derivative products initially emerged as hedging devices against fluctuations in commodity prices and commodity-linked derivatives remained the sole form of such products for a long time. The financial derivatives came into spotlight in post-1970 period due to growing instability in the financial markets. However, since their emergence, financial derivatives have become very popular and by 1990s, they accounted for about two-thirds of total transactions in derivative products. In recent years, the market for financial derivatives has grown tremendously both in terms of variety of instruments available, their complexity and also turnover.

In India also financial products such as mortgage-backed securities (MBS) and asset-backed securities (ABS) are in existence. Besides the securitized products, the Indian forex and rupee derivative markets have also developed significantly over the years.

In respect of forex derivatives involving rupee, residents have access to foreign exchange forward contracts, foreign currency-rupee swap instruments and currency options—both cross currency and foreign currency-rupee. As stated in the Annual Policy Statement for the year 2008-09, the Reserve Bank of India (RBI) announced the introduction of currency futures in the eligible exchanges for which the broad framework was announced in August 2008. In future, some more innovative and complex products might emerge. These products may pose several regulatory and supervisory challenges.

HISTORY OF DERIVATIVES MARKET

Modern textbooks in financial economics often tend to misrepresent the history of the derivatives market. For instance, Hull (2006) puts forth that derivatives became significant only during the past 25 years and that it is only now that they are traded on exchanges. Mishkin (2006) was more specific and he declared that derivatives are new financial instruments that were invented in the 1970s and that this was a result of an increase in the volatility in financial markets that created a demand for hedging instruments to be used by financial institutions to deal with risks.
The history of derivatives is in fact traced back to the origins of commerce in Mesopotamia in the fourth millennium BC. After the collapse of the Roman Empire, contracts for the future delivery of commodities continued to be used in the Byzantine Empire in the Eastern Mediterranean and they survived in canon law in Western Europe. During the Renaissance, financial markets became more sophisticated in Italy and the Low Countries. Contracts for the future delivery of securities were used on a large scale for the first time in Antwerp and then Amsterdam in the sixteenth century. Derivative trading on securities spread from Amsterdam to England and France at the end of the seventeenth century, and from France to Germany in the early nineteenth century.

The first exchange for trading derivatives happened to be the Royal Exchange in London, which permitted forward contracting. The first "futures" contracts are generally traced to the Yodoya rice market in Osaka, Japan around 1650. These were evidently standardized contracts, which made them much like today's futures, although it is not known if the contracts were marked to market daily and/or had credit guarantees. The next major event, and the most significant as far as the history of U.S. futures markets, was the creation of the Chicago Board of Trade in 1848. This came up when farmers faced difficulties to store the enormous increase in supply that occurred following the Midwestern grain harvest. Chicago spot prices rose and fell drastically. A group of grain traders then created the "to-arrive" contract, which allowed farmers to lock in the price and deliver the grain later. The grain was either stored on the farm or at a storage facility nearby, to be delivered to Chicago months later. These to-arrive contracts proved useful as a device for hedging and speculating on price changes. The grain could always be sold and delivered anywhere else at any time. These contracts were eventually standardized around 1865. Profit charts made derivatives accessible to young scientists, including Louis Bachelier and Vinzenz Bronzin, who had the mathematical knowledge for the rigorous analysis of derivative pricing. Consequently in 1925, the first futures clearinghouse was formed.

The Chicago Board of Trade (CBOT), the largest derivative exchange in the world, was founded in 1848 where forward contracts on various commodities were standardized around 1865. From then on, futures contracts have remained more or less in the same form, as we know them today. In 1919, the Chicago Butter and Egg
Board, a spin-off of CBOT, was reorganized to allow futures trading. Its name was changed to Chicago Mercantile Exchange (CME). In April 1973, the Chicago Board of Options Exchange was set up specifically for trading in options. The markets for options developed so fast that by early 1980s the number of shares underlying the option contract sold each day exceeded the daily volume of shares traded on the New York Stock Exchange. There has been no looking back ever since.

Thus while a few commodity-based (e.g., agricultural) industries have a long history of hedging with exchange-traded derivatives, the use of derivatives has indeed grown remarkably since the introduction of foreign exchange and interest rate products in the 1970s. Derivatives are not really new products; they were indeed around before the time of Christ however it is as from the 1970s that they started gaining popularity.

Today the size of derivatives markets is enormous, and by some measures it exceeds that for bank lending, securities and insurance. Mirroring this growth is an increasing volume of research that seeks to understand the economic rationales for financial risk management. For example, financial theory suggests that corporate risk management is bound to increase firm value in the presence of capital market imperfections such as bankruptcy costs, a convex tax schedule (Smith and Stulz, 1985), or underinvestment problems (Bessembinder, 1991; Froot, Scharfstein, and Stein, 1993).

Despite these developments, derivatives seem to remain a rather exotic area that often puzzles the public, who has come to know about these derivatives largely through the reporting in the news media of cases involving large losses. These cases include Enron (Partnoy 2002), Barings PLC (Kuprianov 1995), and Procter & Gamble (Miller 1997). One of America's wealthiest localities, Orange County, California, declared bankruptcy, allegedly due to derivatives trading, but more accurately, due to the use of leverage in a portfolio of short-term Treasury securities. England's venerable Barings Bank declared bankruptcy due to speculative trading in futures contracts by a 28-year old clerk in its Singapore office. These and other large losses led to a huge outcry, sometimes against the instruments and sometimes against the firms that sold them. There was presumably nothing wrong with the techniques themselves, just the way in which they were used. It is sometimes argued that
measures to improve the safety of car occupants, e.g. seat belts, increase risk by encouraging drivers to go faster than they would without them. While some trivial changes occurred in the way in which derivatives were sold, most firms simply established tighter controls and continued to use derivatives.

It is possible that the sophisticated models that apparently enable risk to be accurately quantified encourage risk taking by financiers who would otherwise err on the side of caution. However that does not explain other scandals that have involved derivatives. Lots of economists warned about the dangers associated with derivatives and Sir Julian Hodge was one of the first to do so. The complexity of derivatives and the need for transparency in their reporting have led to several serious debates, the most recent being the collapse of AIG and the 2008 credit crisis in the UK.\textsuperscript{13}

**INTERNATIONAL EXPERIENCE OF DERIVATIVES**

As we watch efforts going into the creation of India's exchange-traded derivatives industry, comparisons with other countries are useful. In all OECD countries, derivatives are a crucial and vibrant part of the financial system.

The most interesting and important experience is that of China, a fascinating case study of the merits and demerits of a relatively unregulated start of derivatives trading. In the early 1990s, a plethora of unregulated derivatives exchanges came up in China. Many of these exchanges lacked the key institution of the clearing house as counterparty, and most of them featured rampant market manipulation where insiders in the exchange management earned abnormal profits at the expense of outside market participants.

Many observers have cited China's experience with 50 exchanges as an example of how poorly-regulated and hasty growth of derivatives markets may be problematic. However, the other side of the picture is now clear the experience with these 50 exchanges got the Chinese markets off the ground, and generated the necessary know-how amongst exchange staff, regulators aid users. In the end, China has derivatives exchanges which lave significant trading volumes on a world scale.

Another important example is that of Mexico, which is in the same time zone as Chicago: the derivatives exchanges of Chicago have done a thorough job of launching numerous derivative products based on Mexican underlying. This has made the creation of exchanges in Mexico much harder.
Taiwan is another interesting case. Taiwan is like India in terms of enormous delays which have beset the creation of a domestic derivatives exchange. In January 1997, markets in Chicago and Singapore started trading futures on a Taiwanese market index.

Exchanges such as the Chicago Mercantile Exchange (CME), Chicago Board of Trade (CBOT), Chicago Board Options Exchange (CBOE), American Stock Exchange, Sydney Futures Exchange, Hong Kong Futures Exchange and Singapore International Monetary Exchange (SIMEX) have all launched emerging market initiatives, whereby they aim to trade derivatives of underlying from emerging markets.

The US is an example of a clumsy regulatory approach, where an agency named the CFTC regulates futures while the traditional securities markets regulator, the SEC, regulates options on securities. This artificial distinction has no economic rationale, and has served to distort the development of the markets.

What are the problems which bedevil the growth of derivative markets across emerging markets in general? One source of difficulty is poor infrastructure, particularly in clearing and settlement. In India, a major initiative in clearing illicit derivatives was National Securities Clearing Corporation (NSCC) which was created by National Stock Exchange (NSE).

NSCC was the first effort in clearing where the clearing corporation becomes the legal counterparty to both legs of every transaction, and thus eliminates counterparty risk.

Derivatives is an area where a unified picture of the entire securities industry—spanning equity, debt, foreign exchange, commodities and real estate—is enormously useful. The functioning of the derivatives industry emphasizes that a futures is a futures, regardless of the underlying on which the futures is being traded. The great derivatives exchanges of the world simultaneously trade derivatives on all of equity, debt, foreign exchange, commodities and real estate.

In this sense, the basic policy issues faced in the derivatives area (market manipulation, strength of the clearing houses and competition between exchanges worldwide) are universal to all major market.14
DEVELOPMENT OF DERIVATIVE MARKETS IN INDIA

Derivatives markets have been in existence in India in some form or other for a long time. In the area of commodities, the Bombay Cotton Trade Association started futures trading in 1875 and, by the early 1900s India had one of the world’s largest futures industries. In 1952 the government banned cash settlement and options trading and derivatives trading shifted to informal forwards markets. In recent years, government policy has changed, allowing for an increased role for market-based pricing and less suspicion of derivatives trading. The ban on futures trading of many commodities was lifted starting in the early 2000s, and national electronic commodity exchanges were created.

In the equity markets, a system of trading called “badla” involving some elements of forwards trading had been in existence for decades. However, the system led to a number of undesirable practices and it was prohibited off and on till the Securities and Exchange Board of India (SEBI) banned it for good in 2001. A series of reforms of the stock market between 1993 and 1996 paved the way for the development of exchange-traded equity derivatives markets in India. In 1993, the government created the NSE in collaboration with state-owned financial institutions. NSE improved the efficiency and transparency of the stock markets by offering a fully automated screen-based trading system and real-time price dissemination. In 1995, a prohibition on trading options was lifted. In 1996, the NSE sent a proposal to SEBI for listing exchange-traded derivatives. The report of the L.C. Gupta Committee, set up by SEBI, recommended a phased introduction of derivative products, and bi-level regulation (i.e., self-regulation by exchanges with SEBI providing a supervisory and advisory role). Another report, by the J. R. Varma Committee in 1998, worked out various operational details such as the margining systems. In 1999, the Securities Contracts (Regulation) Act of 1956, or SC(R)A, was amended so that derivatives could be declared “securities.” This allowed the regulatory framework for trading securities to be extended to derivatives. The Act considers derivatives to be legal and valid, but only if they are traded on exchanges. Finally, a 30-year ban on forward trading was also lifted in 1999.

The economic liberalization of the early nineties facilitated the introduction of derivatives based on interest rates and foreign exchange. A system of market-
determined exchange rates was adopted by India in March 1993. In August 1994, the rupee was made fully convertible on current account. These reforms allowed increased integration between domestic and international markets, and created a need to manage currency risk. Figure 1 shows how the volatility of the exchange rate between the Indian Rupee and the U.S. dollar has increased since 1991. The easing of various restrictions on the free movement of interest rates resulted in the need to manage interest rate risk.\textsuperscript{15}

**REASONS FOR THE POPULARITY OF DERIVATIVES**

Financial derivatives have become popular due to the following reasons:

- Increased volatility in asset prices in financial markets.
- Increased integration of national financial markets with the international markets.
- Marked improvement in communication facilities and sharp decline in their costs.
- Development of more sophisticated risk management tools, providing economic agents a wider choice of risk management strategies.
- Innovations in the derivatives markets, which optimally combine the risks and returns over a large number of financial assets, leading to higher returns, reduced risk as well as transaction costs as compared to individual financial assets.

In the class of equity derivatives, futures and options on stock indices have gained more popularity than on individual stocks, especially among institutional investors, who are major users of index-linked derivatives. Even small investors find these useful due to high correlation of the popular indices with various portfolios and ease of use. The lower costs associated with index derivatives vis-à-vis derivative products based on individual securities is another reason for their growing use.\textsuperscript{16}

**USES OF DERIVATIVES**

Derivatives are used by companies and individuals wanting to cover their risks. This is facilitated by a counterparty that either has the motivation to make profits out of the premium or holds a mirror-image opposite position. Used this way,
derivatives offer an important tool of risk management, without which companies and individuals would have been exposed to the vagaries of price fluctuations. However, the use of derivatives requires skill in respect of timing, a strategy regarding the extent of coverage and the need to be consistent in one's approach. One of the greatest objections to derivatives has been that they encourage speculation. In other words, deals on derivative contracts are entered into even by those who do not have a risky asset position. It can be entered into by speculators betting on a given price movement or absence of fluctuations. While this in itself may not seem to be objectionable, if this practice is carried to disproportionate limits, the speculators are exposed to huge losses and sometimes bankruptcy. Many companies have been ruined by over-zealous officials recklessly entering into positions on derivatives and taking on enormous risk in the hope of gains on favorable price movements. Since derivative instruments are complex and involve sophistication in pricing and strategy, it is beyond the non-specialist to comprehend the exact risk that the company is exposed to from these instruments. In the process the company concerned is exposed to great risk.

Even after weighing in the possible misuse of these instruments, these have, nevertheless, been proved to be invaluable in safeguarding the company's income and profits. Many companies set up their own strategies regarding the extent of risk they wish to have covered, and correspondingly they enter into appropriate derivative transactions for the purpose. This process results in prevention of unnecessary risk and optimization of profits.17

FEATURES OF A FINANCIAL DERIVATIVE

As observed earlier, a financial derivative is a financial instrument whose value is derived from the value of an underlying asset. Hence, the name 'derivative' came into existence. There are a variety of such instruments which are extensively traded in the financial markets all over the world, such as forward contracts, futures contracts, call and put options, swaps, etc. A more detailed discussion of the properties of these contracts will be given later part of this lesson. Since each financial derivative has its own unique features, in this section, we will discuss some of the general features of a simple financial derivative instrument.
The basic features of the derivative instrument can be drawn from the general definition of a derivative irrespective of its type. Derivatives or derivative securities are future contracts which are written between two parties (counter parties) and whose value are derived from the value of underlying widely held and easily marketable assets such as agricultural and other physical (tangible) commodities, or short term and long term financial instruments, or intangible things like weather, commodities price index (inflation rate), equity price index, bond price index, stock market index, etc. Usually, the counter parties to such contracts are those other than the original issuer (holder) of the underlying asset. From this definition, the basic features of a derivative may be stated as follows.

1. A derivative instrument relates to the future contract between two parties. It means there must be a contract-binding on the underlying parties and the same to be fulfilled in future. The future period may be short or long depending upon the nature of contract, for example, short term interest rate futures and long term interest rate futures contract.

2. Normally, the derivative instruments have the value which derived from the values of other underlying assets, such as agricultural commodities, metals, financial assets, intangible assets, etc. Value of derivatives depends upon the value of underlying instrument and which changes as per the changes it underlying assets, and sometimes, it may be nil or zero. Hence, they are close related.

3. In general, the counter parties have specified obligation under the derivative contract. Obviously, the nature of the obligation would be different as per the type of the instrument of a derivative. For example, the obligation of the counter, parties, under the different derivatives, such as forward contract, future contra option contract and swap contract would be different.

4. The derivatives contracts can be undertaken directly between the two parties or through the particular exchange like financial futures contracts. The exchange-traded derivatives are quite liquid and have low transaction costs in comparison to tailor-made contracts. Example of exchange traded derivatives are Dow Jons, S&P 500, Nikki 225, NIFTY option, S&P Junior that are traded on New York Stock Exchange, Tokyo Stock Exchange, National Stock Exchange. Bombay Stock Exchange and so on.
5. In general, the financial derivatives are carried off-balance sheet. The size of the derivative contract depends upon its notional amount. The notional amount is the amount used to calculate the payoff. For instance, in the option contract the potential loss and potential payoff, both may be different from the value of underlying shares, because the payoff of derivative products differs from the payoff that their notional amount suggests.

6. Usually, in derivatives trading, the taking or making of delivery of underlying assets is not involved; rather underlying transactions are mostly settled by taking offsetting positions in the derivatives themselves. There is, therefore, no effective limit on the quantity of claims, which can be traded in respect of underlying assets.

7. Derivatives are also known as deferred delivery or deferred payment instrument. It means that it is easier to take short or long position in derivatives in comparison to other assets or securities. Further, it is possible to combine them to match specific, i.e., they are more easily amenable to financial engineering.

8. Derivatives are mostly secondary market instruments and have little usefulness in mobilizing fresh capital by the corporate world; however, warrants and convertibles are exception in this respect.

9. Although in the market, the standardized, general and exchange-traded derivatives are being increasingly evolved, however, still there are so many privately negotiated customized, over-the-counter (OTC) traded derivatives are in existence. They expose the trading parties to operational risk, counter-party risk and legal risk. Further, there may also be uncertainty about the regulatory status of such derivatives.

10. Finally, the derivative instruments, sometimes, because of their off-balance sheet nature, can be used to clear up the balance sheet. For example, a fund manager who is restricted from taking particular currency can buy a structured note whose coupon is tied to the performance of a particular currency pair.
CLASSIFICATIO OF DERIVATIVES

There is a wide menu of instruments available as derivatives. Each of the instruments is different in some respect or the other, conceptually, operationally or in its uses. The derivatives products are continuously evolving and can be categorized in various ways.

Type of product

The four main types are forwards, futures), options and swaps. They differ in terms of their dependence on the price of the underlying.

Forwards

A forward contract is an agreement between two parties to buy or sell, as the case may be, a commodity (or financial instruments of currency) at a pre-determined future date at price agreed when the contract is entered into. The key elements are that:

(i) the date on which the commodity will be bought/sold is determined in advance
(ii) the price to be paid/received at that future date is determined at present.¹⁹

Futures

Futures are similar to forward contracts in terms of their pricing and concept, but are operationally different from forwards in terms of other features. It is also a forward contract to be settled at a future date. The shortest definition of futures is that it is an exchange traded forward contract. The features of futures contracts are standardized in terms of quantity, delivery dates, delivery venues, quality of the product, etc., unlike forward contracts which facilitate exchange based trading.

Options

Options are contracts for delivery in future like forwards and futures, except that one of the two parties involved holds an option whether to enforce the contract or not, while the other party is obligated to perform at the option of the first party. Option is a right without an obligation to buy or sell an asset at a predetermined price within a specified time interval.
The two types of options are calls and puts

A call gives the holder the right to buy an asset at a certain price within a specific period of time. Calls are similar to having a long position on a stock. Buyers of calls hope that the stock will increase substantially before the option expires.

A put gives the holder the right to sell an asset at a certain price within a specific period of time. Puts are very similar to having a short position on a stock. Buyers of puts hope that the price of the stock will fall before the option expires. 20

Types of Expiration

There are two different types of options with respect to expiration. There is a European style option and an American style option.

- The European style option cannot be exercised until the expiration date. Once an investor has purchased the option, it must be held until expiration.
- An American style option can be exercised at any time after it is purchased.

Today, most stock options which are traded are American style options. And many index options are American style. However, there are many index options which are European style options. An investor should be aware of this when considering the purchase of an index option. 21

Swaps

Swaps are agreements between two parties to exchange a set of cash flows according to a predetermined method. For example, one party may pay a fixed rate of interest in exchange of receiving a variable rate of interest on a notional principal amount for specified intervals of time. The two commonly used swaps are:

**Interest rate swaps:** These entail swapping only the interest related cash flows between the parties in the same currency

**Currency Swaps:** These entail swapping both principal and interest between the parties, with the cash flows in one direction being in a different currency than those in the opposite direction.

Warrants

Options generally have lives of up to one year, the majority of options traded on options exchanges having maximum maturity of nine months. Longer-dated options are called warrants and are generally traded over-the-counter.
**LEAPS**

The acronym LEAPS means Long Term Equity Anticipation Securities. These are options having a maturity of up to three years.

**Baskets**

Basket options are options on portfolios of underlying assets. The underlying asset is usually a moving average or a basket of assets. Equity index options are a form of basket options.

**Swaptions**

Swaptions are options to buy or sell a swap that will become operative at the expiry of the options. Thus, Swaptions is an option on a forward swap. Rather than have calls and puts, the swaptions market has receiver swaptions and payer swaptions. A receiver swaption is an option to receive fixed and pay floating. A payer swaption is an option to pay fixed and receive floating.

**Type of underlying Assets**

Besides definitional classification of derivatives, another source of variety of derivatives emanates from the vast range of underlying assets on which they are traded. One can have a derivative contract on any asset, financial or otherwise. These assets can be physical or hypothetical. It is the compulsion of delivery of the underlying assets that makes the price of derivatives linked to the spot price of the asset. However, in some cases the underlying asset can be hypothetical, such as index futures where the delivery of the underlying asset is not possible, yet one can trade in them for beneficial outcome.

Based on the underlying asset the derivatives can be classified as follows.

**Commodities**

The commodities on which derivatives contracts exist are Agricultural products such as rice, wheat, cotton, oils, soya, tea, coffee, rubber, etc. Metals such as copper, tin, gold, silver, etc.

**Currencies**

Derivatives can be based *on* exchange rates of various currencies such as US dollar, Canadian dollar, Singapore dollar, euro, yen, Mexican peso, etc. All
basic derivatives of forwards, futures, option, and swaps based on exchange rates are actively traded.

**Interest Rates**

Derivatives can also have interest rates as underlying asset. Most common interest rates on which derivatives are traded are London Inter Bank Offer Rate (LIBOR), or instruments whose value is dependent upon yields on T-bills and Treasury bonds.

**Equity Shares**

The most popular underlying assets of derivatives are stocks. As of now, futures and options are very widely traded derivatives on stocks. In the past forward contracts on stocks have been extremely popular.

**Indices**

Derivatives on various indices in the stock markets are possibly the most sought after products because of their ability to provide protection from market risk. Futures and options on stock indices exist all over the world in all major stock exchanges.

**Credit**

A rather recent innovation, they are derivatives that are based on the credit rating or credit risk of cash flows such as installment on loans or other forms of receivables. Various kinds of swaps are the most common derivative in this category where the value of the derivative is a function of default risk. This product is almost exclusive to the banking sector.

**Weather**

Latest among the derivatives is to make natural phenomena as underlying asset so that vagaries of weather can be evened out. Derivatives based on temperature of specific locations are already being traded, while those based on rain are in the offing.

While derivatives on commodities and weather form a separate class, other derivatives discussed above are often referred collectively as financial derivatives because the underlying assets are financial instruments or products.
Type of marketplace

Yet another classification of derivatives can be based on the way they are traded. There are two principal markets for derivative products. A derivative product can be traded in an organized securities and commodities exchange and also, through an ‘over-the-counter’ (‘OTC’) market that are essentially private transactions.²³

Over-the-counter (OTC)

Over-the-counter (OTC) derivatives are contracts that are traded (and privately negotiated) directly between two parties, without going through an exchange or other intermediary. Products such as swaps, forward rate agreements, exotic options - and other exotic derivatives - are almost always traded in this way. The OTC derivative market is the largest market for derivatives, and is mostly unregulated with respect to disclosure of information between the parties.

Exchange-traded derivative contracts (ETD)

Exchange-traded derivative contracts (ETD) are those derivatives instruments that are traded via specialized derivatives exchanges or other exchanges. A derivatives exchange is a market where individual’s trade standardized contracts that have been defined by the exchange. It acts as an intermediary to all related transactions, and takes initial margin from both sides of the trade to act as a guarantee.²⁴

The main differences between exchange and OTC products can be viewed as follows:

**TABLE - 10**

DIFFERENCE BETWEEN EXCHANGE TRADED AND OTC TRADED

<table>
<thead>
<tr>
<th>Variables</th>
<th>Exchange Traded</th>
<th>OTC Traded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pricing</td>
<td>Standardized</td>
<td>Customized</td>
</tr>
<tr>
<td>Maturity</td>
<td>Standardized</td>
<td>Customized</td>
</tr>
<tr>
<td>Quantity</td>
<td>Standardized</td>
<td>Customized</td>
</tr>
<tr>
<td>Frequency</td>
<td>Standardized</td>
<td>Customized</td>
</tr>
<tr>
<td>Quality</td>
<td>Standardized</td>
<td>Customized</td>
</tr>
<tr>
<td>Documentation</td>
<td>Standardized</td>
<td>Customized</td>
</tr>
<tr>
<td>Regulatory Body</td>
<td>One entity</td>
<td>Various</td>
</tr>
</tbody>
</table>
The primary difference is standardization versus customization. This leads to a crucial distinction. When dealing in exchange traded products terms are standardized and the clearinghouse guarantees that the other side of any transaction performs to its obligations. That is, it assumes all contingent default risk so both sides do not need to know about each other’s credit quality. This differs from customized OTC products where there is no clearinghouse to guarantee performance. The need to know the counterparty’s credit standing is an essential distinction. The exposure difference is quite significant. In summary:

Exchange Traded = Standardizes = Market Risk

OTC Traded = Customized = Market Risk + Counterparty Risk. ²⁵

FORWARD CONTRACT

In finance, a forward contract or simply a forward is a non-standardized contract between two parties to buy or to sell an asset at a specified future time at a price agreed upon today, making it a type of derivative instrument. This is in contrast to a spot contract, which is an agreement to buy or sell an asset on its Spot Date, which may vary depending on the instrument, for example most of the FX contracts have Spot Date two business days from today.

FEATURES OF FORWARD CONTRACT

Forward contracts mentioned above have some distinguishing features that are described below. Two Parties Like any contract, a forward contract too involves minimum of two parties, a buyer and a seller of asset. The buyer of the contract is also referred to as long position, while the seller is referred to as having taken a short position.

Over-the-Counter Product

It is an over-the-counter (OTC) product where all relevant aspects of contract, such as the asset, its quantity and quality, the price and delivery date, are fixed on one-to-one basis customized to the needs of the parties involved. The buyer and the seller are in direct touch with each other, albeit existence of brokers is not ruled out.
The Price is Determined Today

The price at which the exchange of asset will be done is negotiated in advance, and is called the forward price. By doing so both the buyer and the seller are attempting to avoid the price risk, and lock-in a price today, making the price prevailing at the time of maturity of the contract irrelevant.

Mutual Obligation to Perform

On due date of the contract makes the delivery of the asset and the buyer pays the price. There is a mutual obligation to perform by both the buyer and the seller. The seller is committed to make delivery on due date, and the buyer is the obligated to pay the consideration.

Counterparty Risk

The buyer and the seller of the contract assume risk, referred as counterparty risk, on each other. The seller may fail to deliver the asset and/or the buyer may fail to make the payment on agreed date. While entering the forward contract both the contracting parties are aware of the possible default by the other party and take adequate precautions to prevent such default on either side. It is worthwhile to mention here that upon maturity of a forward contract, only one and not both the parties would be having an advantageous position. The party in the losing situation is more likely to make a default.

Mutual Consent for Cancellation

Once a forward contract is booked, both parties are obligated to perform. However, the cancellation can only be done through mutual consent of both the parties at any time prior to the maturity of the contract. The feasibility and the terms and conditions of cancellation too may be decided in advance.

No Front-end Payment

No exchange of money is done at the time of entering the forward contract though either party can insist on initial deposit adjustable against price and/or delivery to mitigate counterparty risk.
It may be noted that the features of the forward contract described above are neither essential nor exhaustive. Being an OTC product the buyer and seller of the contract are free to modify the contract as per their specific needs. Some of the features described above may be missing from the contract. The essence of forward contract would lie in fixing the price today for settlement at a later date.  

**TYPES OF FORWARD CONTRACTS**

**Equity Forward Agreements:** An equity forward contract is an agreement to buy or sell and individual stock, a stock portfolio, or a stock index at an agreed price at some point in the future.

**Bond Forward Agreements:** Forward contracts on zero coupon bonds are typically treasury bills contract where the buyer of the contract agrees to buy a treasury bill at a future date and at a price agreed to today. Treasury bills are a discount security that matures at face value. Interest is received implicitly by buying the treasury bills at a discount to face value.

**Currency Forward Agreements:** Another active forward market is the currency forward market. Currency forwards involve two parties who agree to exchange currencies at a future date and a specific exchange rate.

**Commodity Forward Agreements:** A forward market where commodities like gold, silver, wheat, livestock are exchanged for a future date and future prices by seller and buyer usually for hedging and arbitrage purpose and at times for speculation.

**ADVANTAGES OF A FORWARD CONTRACT**

There are various advantages and disadvantages of forward contracts and agreements in the contemporary world following are the advantages,

**Unregulated Market:** The primary advantage of forward contract is that they are unregulated over the counter transactions, so the two counterparties can negotiate any terms that they find mutually agreeable. i.e. customize contracts.

**Flexibility and low cost:** Forward are very flexible and normally no commissions are paid on the trade. Forward contract has three major disadvantages.
Hedging: a risk management technique used to reduce, mitigate and eliminate risk.

Speculation: attempts to profit from price movements.\(^{27}\)

**DISADVANTAGES OF FORWARD CONTRACTS**

The forward contract offers solution to both the parties, i.e. the buyer and the seller. However, forward contracts suffer from certain defects as follows:

**Default risk:** In case the farmer fails to deliver wheat or the buyer fails to pay the price then the other party has no option but to go under the normal provisions of the law for the remedy which could be a long drawn procedure and their normal business would be disturbed.

**One to one agreements:** Forward contracts are one to one agreements and there is no third party (agency) involved who would regulate and guarantee the transaction.

**Quality of product:** In absence of standardization of the quality of the product it could lead to dispute between the buyer and the seller.\(^{28}\)

**FUTURES CONTRACT**

A futures contract is a contractual agreement, generally made on the trading floor of a futures exchange, to buy or sell a particular commodity or financial instrument at a pre-determined price in the future. Futures contracts detail the quality and quantity of the underlying asset; they are standardized to facilitate trading on a futures exchange. Some futures contracts may call for physical delivery of the asset, while others are settled in cash.\(^{29}\)

**FUTURES: A HISTORICAL PERSPECTIVE**

Futures contracts on commodities have been traded for long. In the USA, for instance, such contracts began trading on the CBOT in the 1860s. However, in the past three decades, financial futures contracts have been evolved. The financial futures, probably, are a very significant financial innovation. They encompass a variety of underlying assets—securities, stock indices, interest rates and so on. The beginnings of financial futures were made with the introduction of foreign currency futures contracts on the International Monetary Markets (IMM)—a division of the Chicago Mercantile Exchange (CME) in May 1972. Subsequently, interest rates
futures—where the contract is on an asset whose price is dependent solely on the level of interest rates were introduced on the CBOT in October 1975. Within a short span of time, CBOT made a headway and introduced the Government National Mortgage Association contract (GNMA), and the years 1976 and 1977 saw the launching by IMM, respectively, of the 'treasury bill futures' and 'treasury bonds futures' A futures contract in treasury bonds is one of the most actively traded futures contract in the world and it has, in particular, lent great impetus to the introduction of similar futures on many futures exchanges the world over The 'Eurodollar time deposit' futures contract (the Eurodollar is a dollar deposited in an American or foreign bank outside the USA), which started trading on the IMM in December 1981, was the first contract that was settled in cash, involving no delivery of the underlying asset.

An important development took place in the world of futures contracts in 1982 when stock index futures were introduced in the USA. Although same futures contracts on indices were traded in Europe in the 1970s; however, trading could not mature, as it was mainly done outside the exchanges. It was in America only that a formal beginning was made when the Kansas City Board of Trade (KCBT) introduced stock index futures contracts with the 'value line index' serving as the underlying index. It is interesting to note that the KCBT initially approach Dow Jones & Company for permission to use their 'industrial average' for trading purposes. But the company refused to oblige he KM because it felt that its index would be used as the basis for gambling. The KCBT also tried to obtain permission for the use of standard & Poor's (S&P) index, but to no avail. Eventually, ECBT adopted the 'value line index' In the mean time the CME tied up with S&P In August 1983, the CBOT developed its own stock index contract.

A futures contract on a stock index has been a revolutionary and novel idea because it represents a contract based not on a readily deliverable physical commodity or currency or other negotiable instrument. It is instead based on the concept of a mathematically measurable index that is determined by the market movement of a predetermined set of equity stocks. The Indian market is also going to witness the introduction of stock index futures for the first time.
SIMILARITY BETWEEN FUTURES AND FORWARD TRANSACTION

Such kinds of transactions are used as a tool to hedge the risk or to speculate on the underlying asset, one is highly standardized and the other is customized. In spite of the differences between the two, there are certain similarities between them, which are as follows:

**Derivative product**

Both the futures and the forward transactions are derivative products. The value of both of them depends upon the underlying asset. They generate a value according to the movement of prices of the underlying asset.

**Tools for hedging**

Hedging is a mechanism to counter balance or minimize the risk arising from investment in securities. Under this an investor executes different type of derivative transactions to eliminate or minimize the risk both the futures and forward transactions provide such benefit. Whenever an investor has a prior claim either to deliver or receive certain securities, he can counter balance the risk of claim by entering into these transactions.

**Tool to speculate**

Both of these provide an opportunity to speculate in the underlying asset. With the help of large position in them, one can gain when prices rise the future, and when prices decline the short position creates value. Such opportunity is available at no extra cost.\(^3\)

**PURPOSE OF A FUTURES MARKET**

Futures markets provide flexibility to an otherwise rigid spot market because of their very concept which allows a holistic approach to the price mechanism involved in futures contracts. The future price of a commodity is a function of various commodities related and market related factors and their inter-play determines the existence of a futures contract and its price. Futures markets are relevant because of various reasons, some of which are as follows.
Quick and Low Cost Transactions

Futures contracts can be created quickly at low cost to facilitate exchange of money for goods to be delivered at future date. Since these low cost instruments lead to a specified delivery of goods at a specified price and on a specified date, it becomes easy for the finance to take optimal decisions in regard to production, consumption and inventory. The costs involved in entering into futures contracts is insignificant as compared to the value of commodities being sided underlying these contracts.

Price Discovery Function

The pricing of futures contracts incorporates a set of information based on which the producers and the consumers can get a fair idea of the future demand and supply position of the commodity and consequently the futures spot price. This is known as the 'price discovery' function of futures.

Advantage to Informed Individuals

Individuals, who have superior information in regard to factors like commodity demand-supply, market behaviour, technology changes etc., can operate in futures markets and impart efficiency to the commodity's price determination process. This, in turn, leads to a more efficient allocation of resources.

Hedging Advantage

Adverse price changes which may lead to losses, can be adequately and efficiently hedged against through futures contracts. An individual who is exposed to the risk of an adverse price change while holding a position, either long or short a commodity, will need to enter into a transaction which could protect him in the event of such an adverse change. For example, a trader who has imported a consignment of copper and the shipment is to reach within a fortnight, may sell copper futures if he foresees fall in copper prices. In case copper prices actually fall, the trader will lose on sale of copper but will recoup through futures. On the contrary if copper prices rise, the trader will honor the delivery of the futures contract through the imported copper stocks already available with him. Thus, futures markets provide economic as well as social benefits through their functions of risk management and price discovery.
FEATURES OF THE FUTURES CONTRACTS

Standardization

One of the most important features of futures contract is that the contract has certain standardization specification, i.e., quantity of the asset, quality of the asset, the date and month of delivery, the units of price quotation, location of settlement, etc., For Example, the largest exchanges on which futures contracts are traded are the Chicago Board of trade (CBOT) and the Chicago Mercantile Exchange (CME). They specify about each term of the futures contract.

Clearing house

In the futures contract, the exchange clearing house is an adjunct of the exchange and acts as an intermediary or middleman in futures. It gives the guarantee for the performance of the parties to each transaction. The clearing house has a number of members all of which have offices near to the clearing house. Thus, the clearing house is the counter party to every contract.

Settlement price

Since the futures contracts are performed through a particular exchange, so at the close of the day of trading, each contract is marked-to-market. For this the exchange establishes a settlement price. This settlement price is used to compute the profit or loss on each contract for that day, Accordingly, the member's accounts are credited or debited.

Daily settlement and margin

Another feature of a futures contract is that when a person enters into a contract, he is required to deposit funds with the broker, which is called as margin. The exchange usually sets the minimum margin required for different assets, but the broker can set higher margin limits for his clients which depend upon the credit-worthiness of the clients. The basic objective of the margin account is to act as collateral security in order to minimize the risk of failure by either party in the futures contract.
**Tick size**

The futures prices are expressed in currency units, with a minimum price movement called a tick size. This means that the futures prices must be rounded to the nearest tick. The difference between a futures price and the cash price of that asset is known as the basis.

**Cash settlement**

Most of the futures contracts are settled in cash by having the 'short or long to make a cash payment on the difference between the futures price at which the contract was entered and the cash price at expiration date. This is done because it is inconvenient or impossible to deliver sometimes, the underlying asset. This type of settlement is very much popular in stock indices futures contracts.

**Delivery**

The futures contracts are executed on the expiry date. The counter parties with a short position are obligated to make delivery to the exchange, whereas the exchange is obligated to make delivery to the longs. The period during which the delivery will be made is set by the exchange which varies from contract to contract.

**Regulation**

The important difference between futures and forward markets is that the futures contracts are regulated through a exchange, but the forward contracts are self regulated by the counterparties themselves. The various countries have established Commissions in their country to regulate futures markets both in. stocks and commodities. Any such new futures contracts and changes to existing contracts must be approved by their respective Commission. 33
### TABLE - 11
DIFFERENCE BETWEEN FORWARD AND FUTURES CONTRACT

<table>
<thead>
<tr>
<th>Variables</th>
<th>Forward Contract</th>
<th>Futures Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition</strong></td>
<td>A forward contract is an agreement between two parties to buy or sell an asset (which can be of any kind) at a pre-agreed future point in time at a specified price.</td>
<td>A futures contract is a standardized contract, traded on a futures exchange, to buy or sell a certain underlying instrument at a certain date in the future, at a specified price.</td>
</tr>
<tr>
<td><strong>Structure &amp; Purpose</strong></td>
<td>Customized to customer needs. Usually no initial payment required. Usually used for hedging.</td>
<td>Standardized. Initial margin payment required. Usually used for speculation.</td>
</tr>
<tr>
<td><strong>Transaction method</strong></td>
<td>Negotiated directly by the buyer and seller</td>
<td>Quoted and traded on the Exchange</td>
</tr>
<tr>
<td><strong>Market regulation</strong></td>
<td>Not regulated</td>
<td>Government regulated market (the Commodity Futures Trading Commission or CFTC is the governing body)</td>
</tr>
<tr>
<td><strong>Institutional guarantee</strong></td>
<td>The contracting parties</td>
<td>Clearing House</td>
</tr>
<tr>
<td><strong>Risk</strong></td>
<td>High counterparty risk</td>
<td>Low counterparty risk</td>
</tr>
<tr>
<td><strong>Guarantees</strong></td>
<td>No guarantee of settlement until the date of maturity only the forward price, based on the spot price of the underlying asset is paid</td>
<td>Both parties must deposit an initial guarantee (margin). The value of the operation is marked to market rates with daily settlement of profits and losses.</td>
</tr>
<tr>
<td><strong>Contract Maturity</strong></td>
<td>Forward contracts generally mature by delivering the commodity.</td>
<td>Future contracts may not necessarily mature by delivery of commodity.</td>
</tr>
<tr>
<td><strong>Expiry date</strong></td>
<td>Depending on the transaction</td>
<td>Standardized</td>
</tr>
<tr>
<td><strong>Method of pre-termination</strong></td>
<td>Opposite contract with same or different counterparty. Counterparty risk remains while terminating with different counterparty.</td>
<td>Opposite contract on the exchange.</td>
</tr>
<tr>
<td><strong>Contract size</strong></td>
<td>Depending on the transaction and the requirements of the contracting parties.</td>
<td>Standardized</td>
</tr>
<tr>
<td><strong>Market</strong></td>
<td>Primary &amp; Secondary</td>
<td>Primary</td>
</tr>
</tbody>
</table>

**ADVANTAGES OF FUTURES TREADING**

Future contracts, because of the way they are structured and traded, have many inherent advantages over trading stocks.

**Futures are highly Leveraged Investments**

An investor has to put in a margin—a fraction of the total amount (typically 10% of the contract value)—to be invested in futures. The margin is a security that the investor has to keep with the exchange in case the market moves opposite to the position he has taken and he incurs loses. This may be more than the margin amount, in which case the investor has to pay more to bring the margin to a maintenance level.

What trading futures essentially means for the investor is that he can expose himself to a much greater value of stocks than he could when buying the original socks. And thus his profits also multiply if the market moves in his direction (10 times if margin requirement is 10%).

**Future Markets are Very Liquid**

Future contracts are traded in huge numbers every day and hence futures are very liquid. The constant presence of buyers and sellers in the future markets ensures market orders can be placed quickly. Also, this entails that the prices do not fluctuate drastically, especially for contracts that are near maturity. Thus, a large position may also be cleared out quite easily without any adverse impact on price.

**Commissions and Execution Costs are Low**

Commissions on future trades are very low and are charged when the position is closed. The total brokerage or commission is usually as low as 0.5% of the contract value. However, it depends on the level of service provided by the broker. An online trading commission may be as low as $5 per side, whereas full-service brokers may charge $50 per trade.

**Speculators Can Make Fast Money**

An investor with good judgment can make quick money in futures because essentially he is trading with 10 times as much exposure than with normal stocks. Also, prices in the future markets tend to move faster than in the cash or spot markets.
Similarly, there is also the risk of losing money. However, it could be minimized by using stop-loss orders.

**Futures are great for Diversification or Hedging**

Futures are very important vehicles for hedging or managing different kinds of risk. Companies engaged in foreign trade use futures to manage foreign exchange risk, interest rate risk by locking in a interest rate in anticipation of a drop in rates if they have a sizeable investment to make, and price risk to lock in prices of commodities such as oil, crops, and metals that serve as inputs. Futures and derivatives help increase the efficiency of the underlying market because they lower unforeseen costs of purchasing an asset outright. For example, it is much cheaper and more efficient to go long in S&P 500 futures than to replicate the index by purchasing every stock.

**Future Markets are more efficient and fair**

It is difficult to trade on inside information in future markets. For example, who can predict for certain the next Federal Reserve's policy action, or the weather for that matter?

**Futures Contracts are basically only Paper Investments**

The actual stock/commodity being traded is rarely exchanged or delivered, except on the occasion when someone trades to hedge against a price rise and takes delivery of the commodity/stock on expiration. Futures are usually a paper transaction for investors interested solely on speculative profit.

**Short Selling is Legal**

One can get short exposure on a stock by selling a futures contract, and it is completely legal and applies to all kinds of futures contracts. On the contrary, one cannot short sell all stocks, and there are different regulations in different markets, some prohibiting short selling of stocks altogether.

Futures have great advantages that make them appealing for all kinds of investors—speculative or not. However, highly-leveraged positions and large contract sizes make the investor vulnerable to huge losses, even for small movements in the market. Thus, one should strategize and do due diligence before trading futures.\(^\text{34}\)
DISADVANTAGE OF FUTURES TRADING

Future contracts, because of the way they are structured and traded, have many inherent disadvantages over trading stocks.

Danger of Leverage

Futures contracts can be bought or sold with a margin deposit that is typically 5 to 10 percent of the contract value. This means that futures provide a leverage ratio of from 10-to-1 to 20-to-1 on the price movement of the underlying commodity or instrument. If a trader picks the wrong direction for a futures contract, he can lose a large portion or all of the margin deposit in a very short time. The high level of leverage offered by futures trading is a double-edged sword, and the trader must be able to monitor her trades at all times and be ready to close the trades before losses get too large.

Complicated Products

Futures contracts are complicated and can be difficult for new traders to understand. Each contract has a different size and different price movement amounts. For example, a corn contract is for 5,000 bushels of corn and one tick in price change is worth $12.50; crude oil is for 1,000 barrels and a tick is $10; 10-year Treasury note contracts are for $100,000 and a tick is worth $15.625. Traders also have to understand final trading dates and possible delivery options. Futures are also traded only with brokers that are registered with the Commodity Futures Trading Commission, and cannot be traded with regular stock brokers.

Price Limits

Many commodities have a daily limit on how much the price can change. If a commodity value is changing rapidly, it will quickly reach the limit price each day and traders will not be able to continue trading. A futures trader who is caught on the wrong side of a trade making limit moves every day may be stuck in the contract with few options to stop the losses.

Large Margin Deposit for New Traders

Futures contracts are for large amounts of the underlying commodity or instrument. Even though the margin requirement is a small percentage of the contract
value, the dollar amount can be large for new investors. For example, the margin deposit on a S&P 500 contract is $28,125. Even the e-mini S&P 500 contract requires an initial deposit of $5,625. These amounts can be too large for the new trader trying to learn futures trading.  

**CONTRACT SPECIFICATIONS FOR FUTURES**

A futures contract between two parties should specify in some detail the exact nature of the asset, price, contract size, delivery arrangements, delivery months, tick size, limits on daily price fluctuation and trading unit.

**The Asset**

The delivery of the asset needs to be specified at the time of entering into a contract. When the underlying asset is a commodity, there may be variations in the quality of what is available in the market. It, therefore, becomes important to specify the grade of the commodity that is to be delivered. For example, on CBOT, one of the specifications for corn futures contract, the standard grade is ‘No.2 Soft red' or ‘Dark northern spring No.1', etc.

**The Price**

The price agreeable to the buyer and the seller at the time of delivery of the future contract is specified at the time of agreement. The futures prices quoted are convenient and easy to understand. For example, corn prices on the Chicago Mercantile Exchange (CME) are quoted per bushel. The treasury bonds and notes on futures on CBOT are quoted in dollars with two decimals.

**The Contract Size**

This specifies the amount of the asset that has to be delivered under one contract. If the size of the contract is too large, many investors cannot use the exchange for hedging or for speculative purposes. This is because speculators may not wish to take large positions due to risk. However, if the contract size is too small, trading becomes expensive due to the cost associated with trading.

**Delivery Arrangements**

The place for delivery needs to be specified at the time of the contract to avoid controversy. The location or place of delivery becomes a major issue when the
transportation costs are significant. However, if any alternative delivery locations are specified, the price received by the seller is sometimes adjusted according to the place chosen by him. Sometimes alternatives are specified for the grade of the asset that will be delivered or for the delivery locations.

**Delivery Months**

A futures contract is referred to by its delivery month. For example, July corn, which means that contract is for delivery in the month of July. The delivery months vary from one contract to the other depending upon the underlying asset, and also on the needs of market participants. For certain contracts the delivery period will be throughout the month. Trading on contracts generally ceases a few days before the last day on which the delivery can be made. The date on which the contracts cease to trade is specified by the exchange.

**Tick Size**

The contract also specifies the minimum price fluctuation or tick size. For example, in soybean contract, one tick is 1/4 cent per bushel as the minimum size of contract for soybean is 5000 bushels, which gives a tick size of $12.50 per contract.

**Limits on Daily Price Movements**

The daily price movement limits are specified by the exchange. If the price moves up by a limit, it is referred to as limit up and if it moves down by a limit, it is referred to as limit down. The prime purpose of the daily price limits is to prevent large price fluctuations that may occur due to excessive speculations and also to safeguard the interests of genuine traders. The limits are set by the exchange authorities. However, the price limits become artificial when the price of the underlying commodity is advancing or declining rapidly.

**Trading Unit**

This specifies the minimum number of units that are traded on the exchange. For example, the trading unit for soybean oil is 60,000 pounds on CBOT exchange. Apart from the above general specifications, there are certain definite specifications pertaining to each of the categories based on underlying assets. The trading unit for selected commodities is discussed in the subsequent pages.36
DIFFERENCE BETWEEN TRADING SECURITIES AND TRADING FUTURES ON INDIVIDUAL SECURITIES

To trade securities, a customer must open a security trading account with a securities broker demat account with a securities depository. Buying security involves putting up all the money upfront. With the purchase of shares of a company, the holder becomes a part owner of the company. The shareholder typically receives the rights and privileges associated with the security, which may include the receipt of dividends, invitation to the annual shareholders meeting and the power to vote.

Selling securities involves buying the security before selling it. Even in cases where short selling is permitted, it is assumed that the securities broker owns the security and then "lends" it to the trader so that he can sell it. Besides, even if permitted, short sales on security can only be executed on an up-tick.

To trade futures, a customer must open a futures trading account with a derivatives broker. Buying futures simply involves putting in the margin money. They enable the futures traders to take a position in the underlying security without having to open an account with a securities broker. With the purchase of futures on a security, the holder essentially makes a legally binding promise or obligation to buy the underlying security at some point in the future (the expiration date of the contract). Security futures do not represent ownership in a corporation and the holder is therefore not regarded as a shareholder.

A futures contract represents a promise to transact at some point in the future. In this light, a promise to sell security is just as easy to make as a promise to buy securities. Selling securities futures without previously owning them simply obligates the trader to selling a certain amount of the underlying security at some point in the future. It can be done just as easily as buying futures. Which obligates the trader to buying a certain amount tr1 the underlying securities at some point in the future.

OPTION CONTRACT

An options contract is a contract that allows the holder to buy or sell an underlying security at a given price, known as the strike price. The two most common types of options contracts are put and call options, which give the holder-buyer the right to sell or buy respectively, the underlying at the strike if the price of the
underlying crosses the strike. Typically each options contract is written on 100 shares of the underlying. 38

**OPTION: A HISTORICAL PERSPECTIVE**

The concept of options is not a new one. In fact, options have been in use for centuries. The idea of an option existed in ancient Greece and Rome. The Romans wrote options on the cargoes that were transported by their ships. In the 17th century, there was an active options market in Holland. In fact, options were used in a large measure in the 'tulip bulb mania' of that century. However, in the absence of a mechanism to guarantee the performance of the contract, the refusal of many put option writers to take delivery of the tulip bulbs and pay the high prices of the bulbs they had originally agreed to, led to bursting of the bulb bubble during the winter of 1637. A number of speculators were wiped out in the process.

Options were traded in the USA and UK during the 19th century but were mainly confined to the agricultural commodities. Earlier, they were declared illegal in the UK in 1733 and remained so until 1860 when the Act declaring them illegal was repealed. They were again banned in the third decade of this century, albeit temporarily. In the USA, options on equity stocks of the companies were available on the OTC market only, until April 1973. They were not standardized and involved the intra-party risk.

In India, options on stocks of companies, though illegal, have been traded for many years, in a limited form. As such, this trading has been a very risky proposition to undertake.

In spite of the long time that has elapsed since the inception of options, they were, until not very long ago, looked down upon as mere speculative tools and associated with corrupt practices. Things changed dramatically in the 1970s when options were transformed from relative obscurity to a systematically traded asset which is an integral part of financial portfolios.

The year 1973 witnessed some major developments. Black and Scholes published a seminal paper explaining the basic principles of options pricing and hedging. In the same year, the Chicago Board Options Exchange (CBOE) was created. It was the first registered securities exchange dedicated to options trading.
While trading in options existed for long, it experienced a gigantic growth with the creation of this exchange. The listing of options meant orderly and thicker markets for this kind of securities. Options trading is now undertaken widely in many countries besides the USA and UK. In fact, options have become an integral part of the large and developed financial markets.

The growth of the futures and options markets is unending. The latest addition is likely to be the Indian market where the introduction of this trading is on the cards.39

**FEATURES OF OPTIONS CONTRACT**

**Highly flexible**

On one hand, option contract are highly standardized and so they can be traded only in organized exchanges. Such option instruments cannot be made flexible according to the requirements of the writer as well as the user. On the other hand, there are also privately arranged options which can be traded ‘over the counter’. These instruments can be made according to the requirements of the writer and user. Thus, it combines the features of ‘futures’ as well as ‘forward’ contracts.

**Down Payment**

The option holder must pay a certain amount called ‘premium’ for holding the right of exercising the option. This is considered to be the consideration for the contract. If the option holder does not exercise his option, he has to forego this premium. Otherwise, this premium will be deducted from the total payoff in calculating the net payoff due to the option holder.

**Settlement**

No money or commodity or share is exchanged when the contract is written. Generally this option contract terminates either at the time of exercising the option by the option holder or maturity whichever is earlier. So, settlement is made only when the option holder exercises his option. Suppose the option is not exercised till maturity, then the agreement automatically lapses and no settlement is required.
Non – Linearity

Unlike futures and forward, an option contract does not possess the property of linearity. It means that the option holder’s profit, when the value of the underlying asset moves in one direction is not equal to his loss when its value moves in the opposite direction by the same amount. In short, profits and losses are not symmetrical under an option contract.

No Obligation to Buy or Sell

In all option contracts, the option holder has a right to buy or sell an underlying asset. He can exercise this right at any time during the currency of the contract. But, in no case, he is under an obligation to buy or sell. If he does not buy or sell, the contract will be simply lapsed.\(^{40}\)

**TYPES OF OPTIONS**

There are many different types of options that can be traded and these can be categorized in a number of ways. In a very broad sense, there are two main types: calls and puts. Calls give the buyer the right to buy the underlying asset, while puts give the buyer the right to sell the underlying asset. Along with this clear distinction, options are also usually classified based on whether they are American style or European style. This has nothing to do with geographical location, but rather when the contracts can be exercised. You can read more about the differences below.

Options can be further categorized based on the method in which they are traded, their expiration cycle, and the underlying security they relate to. There are also other specific types and a number of exotic options that exist. On this page we have published a comprehensive list of the most common categories along with the different types that fall into these categories. We have also provided further information on each type.

- Calls
- Puts
- American Style
- European Style
- Exchange Traded Options
- Over The Counter Options
- Option Type by Expiration
- Option Type by Underlying Security
- Cash Settled Options
- Exotic Options
Calls

Call options are contracts that give the owner the right to buy the underlying asset in the future at an agreed price. You would buy a call if you believed that the underlying asset was likely to increase in price over a given period of time. Calls have an expiration date and, depending on the terms of the contract, the underlying asset can be bought any time prior to the expiration date or on the expiration date.

Puts

Put options are essentially the opposite of calls. The owner of a put has the right to sell the underlying asset in the future at a pre-determined price. Therefore, you would buy a put if you were expecting the underlying asset to fall in value. As with calls, there is an expiration date in the contact.

American Style

The term “American style” in relation to options has nothing to do with where contracts are bought or sold, but rather to the terms of the contracts. Options contracts come with an expiration date, at which point the owner has the right to buy the underlying security (if a call) or sell it (if a put). With American style options, the owner of the contract also has the right to exercise at any time prior to the expiration date. This additional flexibility is an obvious advantage to the owner of an American style contract.

European Style

The owners of European style options contracts are not afforded the same flexibility as with American style contracts. If you own a European style contract then you have the right to buy or sell the underlying asset on which the contract is based only on the expiration date and not before.

Exchange Traded Options

Also known as listed options, this is the most common form of options. The term “Exchanged Traded” is used to describe any options contract that is listed on a public trading exchange. They can be bought and sold by anyone by using the services of a suitable broker.
Over The Counter Options

“Over The Counter” (OTC) options are only traded in the OTC markets, making them less accessible to the general public. They tend to be customized contracts with more complicated terms than most Exchange Traded contracts.

Option Type by Underlying Security

When people use the term options they are generally referring to stock options, where the underlying asset is shares in a publically listed company. While these are certainly very common, there are also a number of other types where the underlying security is something else. We have listed the most common of these below with a brief description.

Forex / Currency Options

Contracts of this type grant the owner the right to buy or sell a specific currency at an agreed exchange rate.

Futures Options

The underlying security for this type is a specified futures contract. A futures option essentially gives the owner the right to enter into that specified futures contract.

Commodity Options

The underlying asset for a contract of this type can be either a physical commodity or a commodity futures contract.

Basket Options

A basket contract is based on the underlying asset of a group of securities which could be made up stocks, currencies, commodities or other financial instruments.

Option Type By Expiration

Contracts can be classified by their expiration cycle, which relates to the point to which the owner must exercise their right to buy or sell the relevant asset under the terms of the contract. Some contracts are only available with one specific type of
expiration cycle, while with some contracts you are able to choose. For most options traders, this information is far from essential, but it can help to recognize the terms. Below are some details on the different contract types based on their expiration cycle.

**Regular Options**

These are based on the standardized expiration cycles that options contracts are listed under. When purchasing a contract of this type, you will have the choice of at least four different expiration months to choose from. The reasons for these expiration cycles existing in the way they do is due to restrictions put in place when options were first introduced about when they could be traded. Expiration cycles can get somewhat complicated, but all you really need to understand is that you will be able to choose your preferred expiration date from a selection of at least four different months.

**Weekly Options**

Also known as weeklies, these were introduced in 2005. They are currently only available on a limited number of underlying securities, including some of the major indices, but their popularity is increasing. The basic principle of weeklies is the same as regular options, but they just have a much shorter expiration period.

**Quarterly Options**

Also referred to as quarterlies, these are listed on the exchanges with expirations for the nearest four quarters plus the final quarter of the following year. Unlike regular contracts which expire on the third Friday of the expiration month, quarterlies expire on the last day of the expiration month.

**Long-Term Expiration Anticipation Securities**

These longer term contracts are generally known as LEAPS and are available on a fairly wide range of underlying securities. LEAPS always expire in January but can be bought with expiration dates for the following three years.

**Cash Settled Options**

Cash settled contracts do not involve the physical transfer of the underlying asset when they are exercised or settled. Instead, whichever party to the contract has
made a profit is paid in cash by the other party. These types of contracts are typically used when the underlying asset is difficult or expensive to transfer to the other party.

**Exotic Options**

Exotic option is a term that is used to apply to a contract that has been customized with more complex provisions. They are also classified as Non-Standardized options. There are a plethora of different exotic contracts, many of which are only available from OTC markets. Some exotic contracts, however, are becoming more popular with mainstream investors and getting listed on the public exchanges. Below are some of the more common types.

**Barrier Option**

These contracts provide a pay-out to the holder if the underlying security does (or does not, depending on the terms of the contract) reach a pre-determined price.

**Binary Options**

When a contract of this type expires in profit for the owner, they are awarded a fixed amount of money. Please visit the following page for further details on these contracts.

**Chooser Options**

These were named "Chooser," options because they allow the owner of the contract to choose whether it's a call or a put when a specific date is reached.

**Compound Options**

These are options where the underlying security is another options contract.

**Look Back Options**

This type of contract has no strike price, but instead allows the owner to exercise at the best price the underlying security reached during the term of the contract.
<table>
<thead>
<tr>
<th>Point of Difference</th>
<th>Futures</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difference in obligation to comply with the terms of</td>
<td>In a futures contract, obligation lies with both the seller and the</td>
<td>Buyer of the options contract is given the right but not the obligation.</td>
</tr>
<tr>
<td>the contract</td>
<td>buyer to settle the terms of the contract before the expiry date</td>
<td>However, seller is responsible to comply with the contract if the buyer</td>
</tr>
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<td></td>
<td></td>
<td>exercises the</td>
</tr>
<tr>
<td>Degree of Profit and loss</td>
<td>Profit and loss potential is unlimited</td>
<td>Profit potential is unlimited while scope of loss for the buyer of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>call/put is limited</td>
</tr>
<tr>
<td>Cash outflow</td>
<td>Upfront margin is required for purchasing futures contract, so cash</td>
<td>In case of options, only premium amount is required to be paid that</td>
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<tr>
<td></td>
<td>outflow is usually large</td>
<td>results in low cash outflow. Also, it is the maximum amount that an</td>
</tr>
<tr>
<td></td>
<td></td>
<td>option purchaser can lose in case of adverse price movement</td>
</tr>
<tr>
<td>Method of profit realization</td>
<td>Profits in futures position are marked-to-market on a daily basis</td>
<td>Going to the market and taking opposite position or exercising the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>option or wait until the maturity of the contract for realizing the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>difference between asset price and strike price</td>
</tr>
<tr>
<td>Purpose</td>
<td>Speculate or hedge risk and also to obtain physical delivery of</td>
<td>Primarily used as hedge instrument</td>
</tr>
<tr>
<td></td>
<td>underlying asset in future period of time</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** [http://www.goodreturns.in/classroom/2013/09/what-is-the-difference-between-futures-and-options-208639.html](http://www.goodreturns.in/classroom/2013/09/what-is-the-difference-between-futures-and-options-208639.html), accessed on 03.06.2014 at 09.43 Hrs.

**ADVANTAGES OF OPTION CONTRACT**

**Flexibility**

With options you can trade any type of potential move in the underlying security. Think the shares might double within a week - perhaps you believe the
shares will hardly move over the next month - you can even use them to protect your downside. Basically if you have a view, you can use an option strategy to trade it

**Gain leverage**

Options can offer incredible leverage, and returns of 100% or even higher are possible. This leverage can be used intelligently. For example, options can be used to take a position in a stock using a small down payment

**Directional choice**

Obviously related to flexibility. Options are good tools for trading upward and downward and even sideways price movements

**Reduce risk**

Futures and CFDs also offer leverage but the potential losses are often open-ended. Many option strategies allow similar leveraged profit potential but with limited risk

**Sell options against shares that you already own**

This is called a covered call strategy and it's a way to earn extra income from shares you already hold

**Can be low risk**

Many option strategies involve low risk or are designed to limit risk

**DISADVANTAGES OF OPTION CONTRACT**

**Can be high risk**

A common misconception with options is that they are high risk. Sure, they can be as high risk as you want but many option strategies are designed to reduce risk. Options, like any financial product, obey the risk/reward ration - the higher the potential reward the higher the potential risk and vice versa.

**Leverage**

It's always a double-edged sword. Leverage is great when making money but horrible when losing as it means all losses are multiplied. Most traders who suffer losses in options do so because they use too much leverage
Complex

It's theoretically possible to teach anyone how to buy and sell shares and conduct general business in the stock market within a few hours. But this cannot be done with options. A proper, solid but basic option education will take about 1-2 months at a minimum. To be a real pro will take at least 1 year. Do not forget this.

Volume

Some options don't trade that much which in turn means there's little liquidity. If no liquidity the bid-offer spreads can be grossly wide, sometimes as much as 10%. With spreads like that it's almost impossible to make money. As a good rule of thumb, first check out the average daily volume and if it's low don't get involved with those options.

Computers normally have to be used

Not always but it's hard to discount their usefulness when using options. If you're not that competent with computers and struggle with Spreadsheet programs like Excel that's going to be a disadvantage.

Wasting assets

Normally a disadvantage to most people new to options because they'll often start off buying them. But options lose value over time so not only do you have to be right on direction but also with your timing. Direction is often not that hard to predict, but timing is a different story altogether.

Unlimited risk

If you sell an option short your risk is often unlimited. Short calls have unlimited risks attached (theoretically there's no limit to how high a share can rise). The risk on a short put is limited as the underlying cannot fall below zero. But if the underlying were to fall sharply the losses on short puts can be horrendous. 42

OPTION COMPONENTS

An option for a given stock has three main components: an expiration date, a strike price and a premium. The expiration date tells the month in which the option
will expire. Options expire one day after the third Friday of the expiration month. The **strike price** is the price at which the holder is allowed to buy or sell the underlying stock at a later date. The **premium** is amount that the holder must pay for the right to exercise the option. Because the holder acquires the right to trade 100 shares, the total cost of the option, if exercised, is 100 times the premium.

In order to relate them to the price of the underlying stock at any given time, options are classified as in-the-money, out-of-the-money or at-the-money. A call option is in-the-money when the stock price is above the strike price and out-of-the-money when the stock price is below the strike price. For put options, the reverse is true. When the stock price and strike price are equal, both types of options are considered at-the-money. Of course, when calculating profit and loss, the premium, as well as taxes and commissions must be factored in. Therefore, an option must be far enough in-the-money to cover these costs in order to be profitable.

**FUNCTIONS OF DERIVATIVES MARKET**

Despite fears of and pitfalls about the efficacy the working of the system in the derivative market, there are a number of functions that are beneficially rendered by the use of derivative instruments as mentioned below:

**Price discovery**

The tools used in a derivatives market such as options, futures, etc., are capable of making a reasonable estimate of a relevant future price that is expected to continue to prevail for a certain period. Such a mechanism results from open and competitive trading on the floor of the exchange thus reflecting the supply and demand position. This is expected to prevail in the certain specified future period. The price that is set in this manner is carried throughout the market by a well-authenticated price reporting system supported by advancement in telecommunications technology. This process of establishing equilibrium in the future price of an asset is known as 'price discovery function'. A derivative market is essentially concerned with anticipating a future price for the asset dealt with. Such a price discovery mechanism is an important part of an efficient financial system. Such a price would truly reflect the relative costs of production and the consumption utilities. The tools help in bringing about equilibrium between present and future price.
Risk management

Another important function of a derivatives market is that of managing the risk exposure resulting from the volatile movements in the price of traded asset. New instruments such as options and futures are known to be very effective in minimizing the risk through the arbitrage process arising from the price movements. Counter party risk is reduced or sometimes non-existent. Liquidity is added to the market through standardized futures contracts. To guarantee the due performance of contracts in future, clearing houses are available which take care of the solvency of the members of trading entry and competition provide for low costs and efficient trading.

Speculative advantage

The success of derivatives market is built on the edifice of assumed minimum level of speculative activity of estimating the kind of price to prevail in future. In fact speculation is considered a boon to the activities in a derivatives market. The activities of speculators such as expecting future prices to go up and indulging in selling spree in order to buy the asset in the future when prices falls and thus to make a profit, all bring about speculative advantage. The increased speculative activity therefore, would bring about better functioning of futures market by allowing for price discovery and hedging.\textsuperscript{44}

Operational Advantages

As opposed to spot markets, derivative markets involve lower transaction cost. Secondly they offer greater liquidity. Large spot transactions can often lead to significant price changes. However, futures markets tend to be more liquid than spot markets, because herein you can take large positions by depositing relatively small margins. Consequently, a large position in derivative markets is relatively easier to take and has less of a price impact as opposed to a transaction of the same magnitude in the spot market. Finally, it is easier to take a sort position in derivative markets than it is to sell short in spot markets.

Market Efficiency

The availability of derivatives makes markets more efficient; spot, futures and options markets are inextricably linked. Since it is easier and cheaper to trade in derivatives, it is possible to exploit arbitrage opportunities quickly and to keep prices in alignment. Hence, these markets help to ensure that prices reflect true values.
Ease of Speculation

Derivative markets provide speculators with a cheaper alternative to engaging in spot transactions. Also, the amount of capital required to take a comparable position is less in this case. This is important because facilitation of speculation is critical for ensuring free and fair markets. Speculators always take calculated risks. A speculator will accept a level of risk only if he is convinced that the associated expected return, is commensurate with the risk that he is taking.45

PARTICIPANTS IN DERIVATIVE MARKET

A derivatives instrument such as futures and options serves various purposes for various market participants. For fund managers, stockiest of goods processors and Investors, they provide price risk management service. Similarly there are certain traders (dealers) who have certain view about future price of a commodity or shares or foreign currency, but they do not have any present or future position of these assets. They trade in futures and option market by taking out right position and earn by favorable price movement. There are some participants who are risk averse and are on lookout for some mispricing of various products or instruments either in spot or in future. They make simultaneous purchase and sell in different markets to take advantage of potential risk less profit. There are also brokers who are taking position in futures and option market for their clients to earn brokerage. In exchanges, there are jobbers who does market making in various futures and option contracts. They earn through bid-ask spread. Thus market participants in futures and option markets are many and they perform multiple role depending upon their position. A trader is acting as a hedger when he is transacting in the market for price risk management. He is speculator if he takes open position in futures market or he sells naked options contracts. He acts as arbitrageur when he enters into simultaneous purchase and sale of commodity, stocks or other asset to take advantage of mispricing. He earns riskless profit in this activity. Such opportunities do not exist for long in efficient market. Brokers and market makers are providing services to others and to create liquidity in the market respectively. Let us briefly discuss the role of various participants in futures and option markets.46
I. TRADING PARTICIPANTS

Hedgers

The process of managing the risk or risk management is called as hedging. Hedgers are those individuals or firms who manage their risk with the help of derivative products. Hedging does not mean maximizing of return. The main purpose for hedging is to reduce the volatility of a portfolio by reducing the risk. Hedgers use futures or options markets to reduce or eliminate the risk associated with price of an asset.

Speculator

Speculators do not have any position, on which they enter into futures and options market, i.e., they take the positions in the futures market without having position in the underlying cash market. They only have a particular view about future price of a commodity, shares, stock index, interest rates or currency they consider various factors like demand and supply, market positions, open interests, economic fundamentals, international events, etc., to make predictions. They take risk in turn from high returns. Speculators are essential in all markets — commodities, equity, interest rates and currency. They help in providing the market the much desired volume and liquidity. Speculators use futures and options contracts to get extra leverage in betting on future movements in the price of an asset. They can increase both the potential gains and potential losses by usage of derivatives in a speculative venture.

Arbitrageurs

Arbitrage is the simultaneous purchase and sale of the same underlying in two different markets in an attempt to make profit from price discrepancies between the two markets. Arbitrage involves activity on several different instruments or assets simultaneously to take advantage of price distortions judged to be only temporary.

Arbitrage occupies a prominent position in the futures world. It is the mechanism that keeps prices of futures contracts aligned properly with prices of underlying assets. The objective is simply to make profits without risk, but the complexity of arbitrage activity is such that it is reserved to particularly well-informed
and experienced professional traders, equipped with powerful calculating and data processing tools. Arbitrage may not be as easy and costless as presumed. Arbitrageurs are in business to take advantage of a discrepancy between prices in two different markets. If, for example, they see the futures price of an asset getting out of line with the cash price, they will take offsetting positions in the two markets to lock-in a profit.

II. INTERMEDIARY PARTICIPANTS

Brokers

For any purchase and sale, brokers perform an important function of bringing buyers and sellers together. As a member in any futures exchange, may be any commodity or finance, one need not be a speculator, arbitrageur or hedger. By virtue of a member of a commodity or financial futures exchange one get a right to transact with other members of the same exchange. This transaction can be in the pit of the trading hall or on online computer terminal. All persons hedging their transaction exposures or speculating on price movement need not be and for that matter cannot be members of futures or option exchange. A non-member has to deal in futures exchange through member only. This provides a member the role of a broker. His existence as a broker takes the benefits of futures and option exchange to the entire economy. All transactions are done in the name of member who is also responsible for final settlement and delivery. This activity of a member is price risk free because he is not taking any position in his account, but his other risk is-client's default risk. He cannot default in his obligation to the clearing house, even if client defaults. So, this risk premium is also inbuilt in brokerage he charges. More and more involvement of non-members in hedging and speculation in futures and options market will increase brokerage business for member and more volume in turn reduces the brokerage. Thus more and more participation of traders other than members gives liquidity and depth to the futures and option markets. Members can attract involvement of others by providing efficient services at a reasonable cost. In the absence of well-functioning broking houses, the futures exchange can only function as a club.
Market makers and jobbers

Even in organized futures exchange, every deal cannot get the counterparty immediately. It is here the jobber or market maker plays his role. They are the members of exchange who takes the purchase or sale by other members in their books and then square off on the same day or next day. They quote their bid-ask rate regularly. The difference between bid and ask is known as bid-ask spread. When volatility in price is more, this spread increases since jobber’s price risk increases. In less volatile market, it is less. Generally, jobbers carry limited risk. Even by incurring loss, they square off their position as early as possible. Since they decide the market price considering the demand and supply of the commodity or asset, they are also known as market makers. Their role is more important in the exchange where outcry system of trading is present. A buyer or seller of a particular futures or option contract can approach that particular jobbing counter and get quotes for executing deals. In automated screen based trading best buy and sell rates are displayed on screen, so the role of jobber is reduced to some extent. In any case, jobbers provide liquidity and volume to any futures and option market.

III. INSTITUTIONAL FRAMEWORK

Exchange

Exchange provides buyers and sellers of futures and option contracts necessary infrastructure to trade. In outcry system, exchange has trading pit where members and their representatives assemble during a fixed trading period and execute transactions. In online trading system, exchanges provide access to members and make available real time information online and also allow them to execute their orders. For derivative market to be successful exchange plays a very important role there may be separate exchange for financial instruments and commodities or common exchange for both commodities and financial assets.

Clearing house

A clearing house performs clearing of transactions executed in futures and option exchanges. Clearing house may be a separate company or it can be a division of exchange. It guarantees the performance of the contracts and for this purpose
clearing house becomes counterparty to each contract. Transactions are between members and clearing house. Clearing house ensures solvency of members by putting various limits on him. Further, clearing house devises a good managing system to ensure performance of contract even in volatile market. This provides confidence of people in futures and option exchange. Therefore, it is an important institution for futures and options market.

**Custodian / warehouse**

Futures and options contracts do not generally result into delivery but there need to be smooth and standard delivery mechanism to ensure proper functioning of market. In stock index futures and options which are cash settled contracts, the issue of delivery may not arise, but it would be there in stock futures or options, commodity futures and options and interest rate futures. In the absence of proper custodian or warehouse mechanism, delivery of financial assets and commodities will be a cumbersome task and future prices will not reflect the equilibrium price for convergence of cash price and futures price on maturity; custodian and ware-house are very relevant.

**Bank for fund movements**

Futures and options contracts are daily settled for which large fund movement from members to clearing house and back is necessary. This can be smoothly handled if a bank works in association with clearing house. Bank can make daily accounting entries in the accounts of members vis-a-vis clearing house and facilitate daily settlement a routine affair. This also reduces the possibility of any fraud or misappropriation of fund by any market intermediary.

**Regulatory framework**

A regulator creates confidence in the market besides providing Level playing field to all concerned, for foreign exchange and money market, RBI is the regulatory authority so it can take initiative in starting futures and options trade in currency and interest rates. For capital market SEBI is playing a lead role, along with physical market in stocks, it will also regulate the stock index futures to be started very soon in India. The approach and outlook of regulator directly affects the strength and volume
in the marketer commodities, Forward Market Commission is working for settling up national commodity exchange.47

ADVANTAGES OF DERIVATIVES

Derivatives are supposed to provide the following services.

1. One of the most important services provided by the derivatives is to control, avoid shift and manage efficiently different types of risks through various strategies like hedging, arbitraging, spreading, etc. Derivatives assist the holders to shift or modify suitably the risk characteristics of their portfolios. These are specifically useful in highly volatile financial market conditions like erratic trading, highly flexible interest rates, volatile exchange rates and monetary chaos.

2. Derivatives serves serve as barometers of the future trends in prices which result in the discovery of new prices both on the spot and futures markets. Further, they help in disseminating different information regarding the futures markets trading of various commodities and securities to the society which enable to discover or form suitable or correct or true equilibrium prices in the markets. As a result, they assist in appropriate and superior allocation of resources in the society.

3. As we see that in derivatives trading no immediate full amount of the transaction is required since most of them are based on margin trading. As a result, large number of traders, speculators arbitrageurs operates in such markets. So, derivatives trading enhance liquidity and reduce transaction costs in the markets for underlying assets.

4. The derivatives assist the investors, traders and managers of large pools of fund to devise such strategies so that they may make proper asset allocation increase their yields and achieve other investment goals.

5. It has been observed from the derivatives trading in the market that the derivatives have smoothen out price fluctuations, squeeze the price spread, integrate prices structure at different points of time and remove gluts and shortages in the market.

6. The derivatives trading encourage the competitive trading in the markets, different risk taking preference of the market operators like speculators, hedgers, trader’s arbitrageurs, etc. resulting in increase in trading volume in the country They also attract young investors, professionals and other experts who will act as catalyst to the growth of financial markets.
Lastly, it is observed that derivatives trading develop the market towards complete markets'. Complete market concept refers to that situation where no particular investors be better off than others, or patterns of returns of all additional securities are spanned by the already existing securities in it, or there is no future scope of additional security.  

CRITIQUES OF DERIVATIVES

Besides from the important services provided by the derivatives, some experts have raised doubts have become critique on the growth of derivatives. They have warned against them and believe that the derivatives will cause to destabilization. Volatility, financial excesses and oscillations in financial markets. It is alleged that they assist the speculators in the market to earn lots of money, and hence, these are exotic instruments. In this section, a few important arguments of the critiques against derivatives have been discussed.

Speculative and Gambling Motives

One of most important arguments against the derivatives is that they promote speculative activities in the market. It is witnessed from the financial markets throughout the world that the trading volume in derivatives, derivatives have increased in multiples of the value of the underlying assets and hardly one to two percent derivatives are settled by the actual delivery of the underlying assets. As such speculation has become the primary purpose of the birth, existence and growth of derivatives. Sometimes, these speculative buying and selling by professionals and amateurs adversely affect the genius producers and distributors. Some financial experts and economists believe that speculation brings about a better allocation of supplies overtime, reduces the fluctuations in prices, make adjustment between demand and supply, I removes periodic gluts and shortages, and thus, brings efficiency to the market. However, in actual practice, above such agreements are not visible. Most of the speculative activities are 'professional speculation' or 'movement trading' which lead to destabilization in the market. Sudden and sharp variations in prices have been caused due to common, frequent and widespread consequence of speculation.
**Increase in Risk**

The derivatives are supposed to be efficient tool of risk management in the market. In fact this is also one sided argument. It has been observed that the derivatives market-especially OTC markets, as particularly customized, privately managed and negotiated, and thus, they are highly risky. Empirical studies in this respect have shown that derivatives used by the banks have not resulted in the reduction in risk, and rather these have risen of new types of risk. They are powerful leveraged mechanism used to create risk. It is further argued that if derivatives are risk management tool, then why government securities, a risk less security, are used for trading interest rate futures which is one of the most popular financial derivatives in the world.

**Instability of the Financial System**

It is argued that derivatives have increased risk not only for their users but also for the whole financial system. The fears of micro and macro financial crisis have caused to the unchecked growth of derivatives which have tarried many market players into big losers. The malpractices, desperate behavior and fraud by the users of derivatives have threatened the stability of the financial markets and the financial system.

**Price Instability**

Some experts argue in favor of the derivatives that their major contribution is toward price stability and price discovery in the market whereas some others have doubt about this. Rather they argue that derivatives have caused wild fluctuations in asset prices, and moreover, they have widened the range of such fluctuations in the prices. The derivatives may be helpful in price stabilization only if there exist a properly organized, competitive and well-regulated market. Further, the traders behave and function in professional manner and follow standard code of conduct. Unfortunately, all these are not so frequently practiced in the market, and hence, the derivatives sometimes cause to price instability rather than stability.

**Displacement Effect**

There is another doubt about the growth of the derivatives that they will reduce the volume of the business in the primary or new issue market specifically for
the new and small corporate units. It is apprehension that most of investors will divert to the derivatives markets, raising fresh capital by such units will be difficult, and hence, this will create displacement effect in the financial market. However, it is riot s argument because there is no such rigid segmentation of investors, and i behave rationally in the market.

**Increased Regulatory Burden**

As pointed earlier that the derivatives create instability in the financial system as a result, there will be more burden on the government or regulatory authorities to control the activities of the traders in financial derivatives. As we see various financial crises and scams in the market from time to time, most of time and energy of the regulatory authorities just spent on to find out new regulatory, supervisory and monitoring tools so that the derivatives do not lead to the fall of the financial system.

In our fast-changing financial services industry, coercive regulations intended to restrict banks' activities will be unable to keep up with financial innovation. As the lines of demarcation between various types of financial service providers continues to blur, the bureaucratic leviathan responsible for reforming banking regulation must face the fact that fears about derivatives have proved unfounded. New regulations are unnecessary.

Indeed, access to risk-management instruments should not be feared, but with caution. Embraced to help the firms to manage the vicissitudes of the market. FA careful review of the risks and rewards derivatives offer, however, suggests that regulatory and legislative restrictions are not the answer. To blame organizational failures solely on derivatives is to miss the point. A better answer lies in greater reliance on market forces to control derivative-related risk taking.

Financial derivatives have changed the face of finance by creating new ways to understand measure and manage risks. Ultimately, financial derivatives should be considered part of any firm's risk management strategy to ensure that value-enhancing investment opportunities are pursued. The freedom to manage risk effectively must not be taken away.\textsuperscript{49}
MISUSES, CRITICISM OF DERIVATIVES

Derivatives act like a double-edged sword. When used properly and conservatively they are highly effective but when used with indiscretion they are capable of causing miseries. Unfortunately there is no pragmatic way to demarcate the discretion with indiscretion. There is a very fine line that separates calculated risk taking and gambling. The following are often cited as demerits of derivatives.

Increased Volatility

Since derivatives offer extremely leveraged position, a large number of participants are attracted towards the market with nominal capital available with them. Giving rise to speculative tendencies derivative markets are often blamed for causing extreme volatilities in the prices, which are also seen in the spot markets. However, it remains to be seen that such volatility in price would be absent in the spot markets if derivatives were not to exist.

There are several instances in India, especially in the commodities, where the trading in derivatives has been banned. The reason cited for such ban is often the wide and unexplainable divergence between the prices in the spot market for the underlying and in derivatives markets. In such circumstances it is often stated that it is the derivatives market that is distorting the prices in the spot market. The notion that derivatives markets can influence the price in the physical markets at best seems misplaced and lacks conviction. In fact trading in derivatives should be seen as a precursor to what may happen in the spot market. With highly leveraged position it is natural that the volatility in prices would be more than in the spot market, but it would be wrong to state that volatility in derivative will get transferred to physical markets. In fact, volatility in markets is inherently caused by the mismatch of demand and supply.

Increased Bankruptcies

Inherent leverage in derivatives may very easily cause bankruptcies when one assumes a position in derivatives that is totally out of sync with the financial position. Since positions in the financial markets are taken in sequentially one default may trigger a chain and can cause market failure.
Burden of Increased Regulation

With increasing derivative activity it is opined that there is an increasing need for regulation. Since derivatives allow accumulation of large positions with little capital, the disclosure of identities and positions taken is imperative. Also there is increasing need to discourage overly speculative positions to prevent bankruptcies and letting the chain of defaults to set in. Disclosure requirements and need to control has placed onerous responsibilities on the monitoring and regulating agencies. Such requirements and control mechanisms are often disliked by some of the participants in the market because they are seen as impediments in the development of free markets.

Recent failures of some of the financial leaders in the USA in 2008 and 2009 due to excessive and innovative derivatives positions by some investment and commercial banks, leading to their failures, has emphasized the need of government intervention. It may be noted that positions of these financial institutions was in OTC derivatives that did not warrant any disclosures. These positions surfaced only when they assumed disastrous proportions. The actions of government to bail out these institutions are criticized for extreme burden on society as the bail outs are essentially seen as evil of ‘privatizing profit and socializing losses.’

RISKS OF DERIVATIVES

The biggest risk is that it's nearly impossible to know the true value of any derivative. That's because it's based on the value of another underlying asset, which can also be difficult to price. That's the reason mortgage-backed securities were so deadly to the economy -- no one, not even the computer programmers who created them, knew what their price was when housing prices dropped. Banks become unwilling to trade them because they couldn't value them.

Another risk is that the same thing that makes them so attractive, and that's leverage. For example, futures traders are only required to put 2-10% of the contract into a margin account to maintain ownership. If the value of the underlying asset drops, they must add money to the margin account to maintain that percentage until the contract expires or is offset. If the commodity price keeps dropping, covering the margin account can lead to enormous losses. For examples, see CFTC Education Center.
The worst part of derivatives is their time restriction. It's one thing to bet that gas prices will go up. It's another thing entirely to know exactly when that will happen. No one who bought MBS thought housing prices would drop -- they hadn't since the Great Depression. They also thought they were protected by CDS. The leverage involved meant that, when losses occurred, they were magnified throughout the entire economy. Furthermore, they were unregulated and not sold on exchanges. This is a risk specific to OTC derivatives.  

**PRODUCTS AND CONTRACT SPECIFICATIONS**

The F&O segment of NSE provides trading facilities for the following derivative products/ instruments:

1. Index based Derivatives
   - Index futures
   - Index options
2. Individual or Single Stock Derivatives
   - Individual stock options
   - Individual stock futures

**INDEX BASED DERIVATIVES**

Certain derivatives are created on index of the market like BSE Sensex (sensitivity index), NIFTY of NSE. In index based derivatives the underlying asset is the index of the market. These are used for both speculations as well as for hedging the risk. To provide a perfect chance for speculation/hedging the index should have a wide representation of the overall market. These derivatives are:

**Index Futures**

Index futures are a transaction to buy or sell a particular index for which a transaction is entered for settlement on a specified future date. It is like any other futures contract with the only difference, that here, the underlying asset is an index. All the parameters of the contract are specified by the stock exchange except the strike price and the choice of duration of the contract, due to this, it is called a standardized product. They are pure speculative tool' and also are used to hedge the risk. Since the underlying asset (index) cannot be executed for delivery by any one therefore all the transactions are settled through cash differences on the value date.
An open position in index futures transaction can either be squared up before the value date or gets settled through cash difference on the value date, i.e. on expiry. In case of square-up, the difference is exchanged by taking the difference of buying price (strike price) and selling price (strike price) and in case of settlement the cash difference is calculated by taking the difference between the settlement price for index and the strike price. This difference is multiplied with the lot size to arrive at the total amount to be paid or received for each lot.

**Index Option**

In an index option transaction, the buyer of the option pays the premium to the seller of the option to obtain the right to buy or sell the underlying index on or before the expiry date. In case of an American option, he can exercise his settlement on any day until the expiry, but, in case of a European option, the right can be exercised only on the expiry date. The buyer of the option has all the rights without any obligation, whereas, the seller of the option has to take the obligation without any rights.

An option's transaction created on an underlying index is called an index option. Index option is similar to stock option discussed earlier with the only difference that herein the underlying asset is an index of the market, like Sensex or Nifty. All the critical parameters like type of index, lot size, tick size, duration and expiry date, type of option, margin system, settlement mechanism, etc., are regulated by the exchange. Hence, it is a standardized product.

The buyer and seller of the index option have to make the selection of duration, number of lots and the premium is actual consent of both the parties. As index is the instrument which can not be delivered, therefore, the settlement is done by taking or giving the cash difference by considering the settlement price and the strike price. 52

**INDIVIDUAL STOCK DERIVATIVES**

**Individual stock future**

In finance, a single-stock future (SSF) is a type of futures contract between two parties to exchange a specified number of stocks in a company for a price agreed today (the futures price or the strike price) with delivery occurring at a specified future date, the delivery date. The contracts are traded on a futures exchange. The party agreeing to take delivery of the underlying stock in the future, the "buyer" of the
contract, is said to be "long", and the party agreeing to deliver the stock in the future, the "seller" of the contract, is said to be "short". The terminology reflects the expectations of the parties - the buyer hopes or expects that the stock price is going to increase, while the seller hopes or expects that it will decrease. Note that the contract itself costs nothing to enter; the buy/sell terminology is a linguistic convenience reflecting the position each party is taking (long or short).

SSFs are usually traded in increments/lots/batches of 100. When purchased, no transmission of share rights or dividends occurs. Being futures contracts they are traded on margin, thus offering leverage, and they are not subject to the short selling limitations that stocks are subjected to. They are traded in various financial markets, including those of the United States, United Kingdom, Spain, India and others. South Africa currently hosts the largest single-stock futures market in the world, trading on average 700,000 contracts daily.  

Trading in stock futures commenced on the NSE from November 2001. These contracts are cash settled on a T+1 basis. The expiration cycle for stock futures is the same as for index futures, index options and stock options. A new contract is introduced on the trading day following the expiry of the near month contract.  

**Individual stock option**

Options contracts where the underlying asset is an equity stock, are termed as Options on stocks. A stock option is a contract between two parties in which the stock option buyer (holder) purchases the right (but not the obligation) to buy/sell 100 shares of an underlying stock at a predetermined price from/to the option seller (writer) within a fixed period of time. They are mostly American style options cash settled or settled by physical delivery. Prices are normally quoted in terms of the premium per share, although each contract is invariably for a larger number of shares, e.g. 100.  

Trading in stock options commenced on the NSE from July 2001. These contracts are European style and are settled in cash. The expiration cycle for stock options is the same as for index futures and index options. A new contract is introduced on the trading day following the expiry of the near month contract. NSE provides a minimum of seven strike prices for every option type (i.e. call and put) during the trading month. There are at least three in-the-money contracts, three out-of-the-money contracts and one at-the-money contract available for trading.
## TABLE - 13

**CONTRACT SPECIFICATION FOR EQUITY DERIVATIVES**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Index Futures</th>
<th>Index Options</th>
<th>Futures on Individual Securities</th>
<th>Options on Individual Securities</th>
<th>Long Term Index Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underlying</td>
<td>6 indices</td>
<td>6 indices</td>
<td>173 securities</td>
<td>173 securities</td>
<td>Nifty 50</td>
</tr>
</tbody>
</table>

**Security Descriptor:**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>FUTIDX</th>
<th>OPTIDX</th>
<th>FUTSTK</th>
<th>OPTSTK</th>
<th>OPTIDX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underlying Symbol</td>
<td>Symbol of Underlying Index</td>
<td>Symbol of Underlying Index</td>
<td>Symbol of Underlying Security</td>
<td>Symbol of Underlying Security</td>
<td>NIFTY</td>
</tr>
<tr>
<td>Expiry Date</td>
<td>DD-MMM-YYYY</td>
<td>DD-MMM-YYYY</td>
<td>DD-MMM-YYYY</td>
<td>DD-MMM-YYYY</td>
<td>DD-MMM-YYYY</td>
</tr>
<tr>
<td>Option Type</td>
<td>CE / PE</td>
<td>CE / PE</td>
<td>CE / PE</td>
<td>CE / PE</td>
<td>CE / PE</td>
</tr>
<tr>
<td>Strike Price</td>
<td>Strike Price</td>
<td>Strike Price</td>
<td>Strike Price</td>
<td>Strike Price</td>
<td>Strike Price</td>
</tr>
<tr>
<td>Trading Cycle</td>
<td>3 month trading cycle - the near month (one), the next month (two) and the far month (three)</td>
<td>Three quarterly expiries (March, June, Sept &amp; Dec cycle) and next 8 half yearly expiries (Jun, Dec cycle)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expiry Day</td>
<td>Last Thursday of the expiry month. If the last Thursday is a trading holiday, then the expiry day is the previous trading day.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strike Price Intervals</td>
<td>Depending on underlying price</td>
<td>Depending on underlying price</td>
<td>Depending on Underlying volatility*</td>
<td>Depending on underlying price</td>
<td></td>
</tr>
<tr>
<td>Permitted Lot Size</td>
<td>Underlying specific</td>
<td>Underlying specific</td>
<td>Underlying specific</td>
<td>Underlying specific</td>
<td>Underlying specific</td>
</tr>
<tr>
<td>Price Steps</td>
<td>Rs.0.05</td>
<td>Rs.0.05</td>
<td>Rs.0.05</td>
<td>Rs.0.05</td>
<td>Rs.0.05</td>
</tr>
<tr>
<td>Price Bands</td>
<td>Operating range of 10% of the base price</td>
<td>A contract specific price range based on its delta value is computed and updated on a daily basis</td>
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</tr>
</tbody>
</table>

TRADING MECHANISM

The NEAT F&O system supports an order driven market, wherein orders match automatically. Order matching is essentially on the basis of security, its price, time and quantity. All quantity fields are in units and price in rupees. The lot size on the futures and options market is 50 for Nifty. The exchange notifies the regular lot size and tick size for each security traded on this segment from time to time. Orders, as and when they are received, are first time stamped and then immediately processed for potential match. When any order enters the trading system, it is an active order. If it finds a match, a trade is generated. If a match is not found, then the orders are stored in different ‘books’. Orders are stored in price-time priority in various books in the following sequence:

- Best Price
- Within Price, by time priority.

Entities in the trading system

There are four entities in the trading system:

Trading members

Trading members are members of NSE. They can trade either on their own account or on behalf of their clients including participants. The exchange assigns a Trading member ID to each trading member. Each trading member can have more than one user.

Clearing members

Clearing members are members of NSCCL. They carry out risk management activities and confirmation/inquiry of trades through the trading system.

Professional clearing members

Professional clearing members is a clearing member who is not a trading member. Typically, banks and custodians become professional clearing members and clear and settle for their trading members.

Participants

A participant is a client of trading members like financial institutions. These clients may trade through multiple trading members but settle through a single clearing member.
ADJUSTMENTS FOR CORPORATE ACTIONS

The basis for any adjustment for corporate actions is such that the value of the position of the market participants, on the cum and ex-dates for the corporate action, continues to remain the same as far as possible. This facilitates in retaining the relative status of positions, namely in-the-money, at-the-money and out-of-money. This also addresses issues related to exercise and assignments.

Corporate actions can be broadly classified under stock benefits and cash benefits. The various stock benefits declared by the issuer of capital are bonus, rights, merger/de-merger, amalgamation, splits, consolidations, hive-off, warrants and secured premium notes (SPNs) among others. The cash benefit declared by the issuer of capital is cash dividend.

Any adjustment for corporate actions is carried out on the last day on which a security is traded on a cum basis in the underlying equities market, after the close of trading hours. Adjustments may entail modifications to positions and/or contract specifications as listed below, such that the basic premise of adjustment laid down above is satisfied:

1. Strike price
2. Position
3. Market lot/multiplier

The adjustments are carried out on any or all of the above, based on the nature of the corporate action. The adjustments for corporate actions are carried out on all open, exercised as well as assigned positions.

ELIGIBILITY CRITERIA FOR SECURITIES/INDICES TRADED IN F&O

Eligibility criteria of stocks

- The stock is chosen from amongst the top 500 stocks in terms of average daily market capitalisation and average daily traded value in the previous six months on a rolling basis.
- The stock's median quarter-sigma order size over the last six months should be not less than Rs. 1 lakh. For this purpose, a stock's quarter-sigma order size should mean the order size (in value terms) required to cause a change in the stock price equal to one-quarter of a standard deviation.
The market wide position limit in the stock should not be less than Rs.50 crore. The market wide position limit (number of shares) is valued taking the closing prices of stocks in the underlying cash market on the date of expiry of contract in the month. The market wide position limit of open position (in terms of the number of underlying stock) on futures and option contracts on a particular underlying stock should be lower of:

- 20% of the number of shares held by non-promoters in the relevant underlying security i.e. free-float holding.
- If an existing security fails to meet the eligibility criteria for three months consecutively, then no fresh month contract will be issued on that security.
- However, the existing unexpired contracts can be permitted to trade till expiry and new strikes can also be introduced in the existing contract months.

For unlisted companies coming out with initial public offering, if the net public offer is Rs.500 crores or more, then the exchange may consider introducing stock options and stock futures on such stocks at the time of its listing in the cash market.

**Eligibility criteria of indices**

The exchange may consider introducing derivative contracts on an index if the stocks.

Contributing to 80% weightage of the index are individually eligible for derivative trading.

However, no single ineligible stocks in the index should have a weightage of more than 5% in the index. The above criteria is applied every month, if the index fails to meet the eligibility criteria for three months consecutively, then no fresh month contract would be issued on that index. However, the existing unexpired contacts will be permitted to trade till expiry and new strikes can also be introduced in the existing contracts.

**Eligibility criteria of stocks for derivatives trading especially on account of corporate restructuring**

The eligibility criteria for stocks for derivatives trading on account of corporate restructuring is as under:
1. All the following conditions shall be met in the case of shares of a company undergoing restructuring through any means for eligibility to reintroduce derivative contracts on that company from the first day of listing of the post restructured company/(s) (as the case may be) stock (herein referred to as post restructured company) in the underlying market,
   a) the Futures and options contracts on the stock of the original (pre restructure) company were traded on any exchange prior to its restructuring;
   b) the pre restructured company had a market capitalisation of at least Rs.1000 crores prior to its restructuring;
   c) the post restructured company would be treated like a new stock and if it is, in the opinion of the exchange, likely to be at least one-third the size of the pre restructuring company in terms of revenues, or assets, or (where appropriate) analyst valuations; and
   d) in the opinion of the exchange, the scheme of restructuring does not suggest that the post restructured company would have any characteristic (for example extremely low free float) that would render the company ineligible for derivatives trading.

2. If the above conditions are satisfied, then the exchange takes the following course of action in dealing with the existing derivative contracts on the pre-restructured company and introduction of fresh contracts on the post restructured company
   a) In the contract month in which the post restructured company begins to trade, the Exchange introduce near month, middle month and far month derivative contracts on the stock of the restructured company.
   b) In subsequent contract months, the normal rules for entry and exit of stocks in terms of eligibility requirements would apply. If these tests are not met, the exchange shall not permit further derivative contracts on this stock and future month series shall not be introduced.  

REGULATORY FRAMEWORK FOR DERIVATIVES

Regulatory Objectives

The Committee believes that regulation should be designed to achieve specific, well-defined goals. It is inclined towards positive regulation designed to encourage healthy activity and behavior. It has been guided by the following objectives:
I. Investor Protection
Attention needs to be given to the following four aspects:

   i. Fairness and Transparency: The trading rules should ensure that trading is conducted in a fair and transparent manner. Experience in other countries shows that in many cases, derivatives brokers/dealers failed to disclose potential risk to the clients. In this context, sales practices adopted by dealers for derivatives would require specific regulation. In some of the most widely reported mishaps in the derivatives market elsewhere, the underlying reason was inadequate internal control system at the user-firm itself so that overall exposure was not controlled and the use of derivatives was for speculation rather than for risk hedging. These experiences provide useful lessons for us for designing regulations.

   ii. Safeguard for clients' moneys: Moneys and securities deposited by clients with the trading members should not only be kept in a separate clients' account but should also not be attachable for meeting the broker's own debts. It should be ensured that trading by dealers on own account is totally segregated from that for clients.

   iii. Competent and honest service: The eligibility criteria for trading members should be designed to encourage competent and qualified personnel so that investors/clients are served well. This makes it necessary to prescribe qualification for derivatives brokers/dealers and the sales persons appointed by them in terms of a knowledge base.

   iv. Market integrity: The trading system should ensure that the market's integrity is safeguarded by minimizing the possibility of defaults. This requires framing appropriate rules about capital adequacy, margins, clearing corporation, etc.

II. Quality of markets
The concept of "Quality of Markets" goes well beyond market integrity and aims at enhancing important market qualities, such as cost-efficiency, price-continuity, and price-discovery. This is a much broader objective than market integrity.

III. Innovation
While curbing any undesirable tendencies, the regulatory framework should not stifle innovation which is the source of all economic progress, more so because
financial derivatives represent a new rapidly developing area, aided by advancements in information technology. 59.

**Major issues concerning regulatory framework**

The Committee's attention had been drawn to several important issues in connection with derivatives trading. The Committee has considered such issues, some of which have a direct bearing on the design of the regulatory framework. They are listed below:

- Should a derivatives exchange be organised as independent and separate from an existing stock exchange?
- What exactly should be the division of regulatory responsibility, including both framing and enforcing the regulations, between SEBI and the derivatives exchange?
- How should we ensure that the derivatives exchange will effectively fulfill its regulatory responsibility?
- What criteria should SEBI adopt for granting permission for derivatives trading to an exchange?
- What conditions should the clearing mechanism for derivatives trading satisfy in view of high leverage involved?
- What new regulations or changes in existing regulations will have to be introduced by SEBI for derivatives trading?

**Should derivatives trading be conducted in a separate exchange?**

1. A major issue raised before the Committee for its decision was whether regulations should mandate the creation of a separate exchange for derivatives trading, or allow an existing stock exchange to conduct such trading. The Committee has examined various aspects of the problem. It has also reviewed the position prevailing in other countries. Exchange-traded financial derivatives originated in USA and were subsequently introduced in many other countries. Organisational and regulatory arrangements are not the same in all countries. Interestingly, in U.S.A., for reasons of history and regulatory structure, futures trading in financial instruments, including currency, bonds and equities, was started in early 1970s, under the auspices of commodity futures markets rather
than under securities exchanges where the underlying bonds and equities were being traded. This may have happened partly because currency futures, which had nothing to do with securities markets, were the first to emerge among financial derivatives in U.S.A. and partly because derivatives were not "securities" under U.S. laws. Cash trading in securities and options on securities were under the Securities and Exchange Commission (SEC) while futures trading was under the Commodities Futures Trading Commission (CFTC). In other countries, the arrangements have varied.

2. The Committee examined the relative merits of allowing derivatives trading to be conducted by an existing stock exchange vis-a-vis a separate exchange for derivatives. The arguments for each are summarised below.

i. Arguments for allowing existing stock exchanges to start futures trading:

a. The most weighty argument in this regard is the advantage of synergies arising from the pooling of costs of expensive information technology networks and the sharing of expertise required for running a modern exchange. Setting-up a separate derivatives exchange will involve high costs and require more time.

b. The recent trend in other countries seems to be towards bringing futures and cash trading under coordinated supervision. The lack of coordination was recognised as an important problem in U.S.A. in the aftermath of the October 1987 market crash. Exchange-level supervisory coordination between futures and cash markets is greatly facilitated if both are parts of the same exchange.

ii. Arguments for setting-up separate futures exchange:

a. The trading rules and entry requirements for futures trading would have to be different from those for cash trading.

b. The possibility of collusion among traders for market manipulation seems to be greater if cash and futures trading are conducted in the same exchange.

c. A separate exchange will start with a clean slate and would not have to restrict the entry to the existing members only but the entry will be thrown open to all potential eligible players.
RECOMMENDATION FOR DERIVATIVES

From the purely regulatory angle, a separate exchange for futures trading seems to be a neater arrangement. However, considering the constraints in infrastructure facilities, the existing stock exchanges having cash trading may also be permitted to trade derivatives provided they meet the minimum eligibility conditions as indicated below:

1. The trading should take place through an online screen-based trading system, which also has a disaster recovery site. The per-half-hour capacity of the computers and the network should be at least 4 to 5 times of the anticipated peak load in any half hour, or of the actual peak load seen in any half-hour during the preceding six months. This shall be reviewed from time to time on the basis of experience.

2. The clearing of the derivatives market should be done by an independent clearing corporation, which satisfies the conditions listed in a later chapter of this report.

3. The exchange must have an online surveillance capability which monitors positions, prices and volumes in real-time so as to deter market manipulation. Price and position limits should be used for improving market quality.

4. Information about trades, quantities, and quotes should be disseminated by the exchange in real-time over at least two information vending networks which are accessible to investors in the country.

5. The Exchange should have at least 50 members to start derivatives trading.

6. If derivatives trading is to take place at an existing cash market, it should be done in a separate segment with a separate membership; i.e., all members of the existing cash market would not automatically become members of the derivatives market.

7. The derivatives market should have a separate governing council which shall not have representation of trading/clearing members of the derivatives Exchange beyond whatever percentage SEBI may prescribe after reviewing the working of the present governance system of exchanges.

8. The Chairman of the Governing Council of the Derivative Division/Exchange shall be a member of the Governing Council. If the Chairman is a Broker/Dealer, then, he shall not carry on any Broking or Dealing Business on any Exchange during his tenure as Chairman.
9. The exchange should have arbitration and investor grievances redressed mechanism operative from all the four areas/regions of the country.

10. The exchange should have an adequate inspection capability.

11. No trading/clearing member should be allowed simultaneously to be on the governing council of both the derivatives market and the cash market.

12. If already existing, the Exchange should have a satisfactory record of monitoring its members, handling investor complaints and preventing irregularities in trading.\textsuperscript{60}

\textbf{SEBI MEASURES TO PROTECT THE RIGHTS OF THE INVESTOR IN DERIVATIVES MARKET}

The measures specified by SEBI include:

- Investor's money has to be kept separate at all levels and is permitted to be used only against the liability of the Investor and is not available to the trading member or clearing member or even any other investor.

- The Trading Member is required to provide every investor with a risk disclosure document which will disclose the risks associated with the derivatives trading so that investors can take a conscious decision to trade in derivatives.

- Investor would get the contract note duly time stamped for receipt of the order and execution of the order. The order will be executed with the identity of the client and without client ID order will not be accepted by the system. The investor could also demand the trade confirmation slip with his ID in support of the contract note. This will protect him from the risk of price favour, if any, extended by the Member.

- In the derivative markets all money paid by the Investor towards margins on all open positions is kept in trust with the Clearing House/Clearing corporation and in the event of default of the Trading or Clearing Member the amounts paid by the client towards margins are segregated and not utilized towards the default of the member. However, in the event of a default of a member, losses suffered by the Investor, if any, on settled / closed out position are compensated from the Investor Protection Fund, as per the rules, bye-laws and regulations of the derivative segment of the exchanges.
The Exchanges are required to set up arbitration and investor grievances redressed mechanism operative from all the four areas / regions of the country.  

**MARKET REGULATION & INVESTOR PROTECTION IN DERIVATIVE MARKET**

We have seen that pursuant to the recommendations of JR Verma Committee SEBI formulated and approved guidelines to the stock exchanges (NSE/BSE) and permitted trading in Derivatives. We will now discuss the regulatory measures as envisaged by SEBI.

1. Futures/ Options contracts in both index as well as stocks can be bought and sold through the trading members of National Stock Exchange, or the BSE Mumbai Stock Exchange. Some of the trading members also provide the internet facility to trade in the futures and options market.

2. The investor is required to open an account with one of the trading members and complete the related formalities which include signing of member-constituent agreement, constituent registration form and risk disclosure document.

3. The trading member will allot the investor an unique client identification number.

4. To begin trading, the investor must deposit cash and/or other collaterals with his trading member as may be stipulated by him. SEBI has issued detailed guidelines for the benefit of the investor trading in the derivatives exchanges. These may be viewed and studied.

5. Margins are computed and collected on-line, real time on a portfolio basis at the client level. Members are required to collect the margin upfront from the client & report the same to the Exchange.

6. All the Futures and Options contracts are settled in cash at the expiry or exercise of the respective contracts as the case may, be. Members are not required to hold any stock of the underlying for dealing in the Futures / Options market.
REVIEW OF RELATED LITERATURE

Anwar, S., Singh, S., Jain, P. K. Procedia (2015), in their paper, “Cash Dividend Announcements and Stock Return Volatility: Evidence from India”, observed that cash dividend announcements are indicative of the future financial performance of the firm. Using ‘event study methodology’, the study has examined the effect of cash dividend announcements on stock returns (abnormal returns, if any) volatility that reflect investors’ expectations of risk and return. The results have provided strong support for ‘Signaling’ and ‘Risk Information’ hypotheses conveying that the volatility of stock returns increased post cash dividend announcement due to decline in firm’s risk; but no significant results were reported for stock returns volatility due to dividend announcements. These findings are consistent with ‘Maturity hypothesis’ requiring firms to pay more dividends on attaining maturity, as a result entering into slower growth period. An important implication of this study is that, managers may employ dividend policy to influence their stock’s risk and to the investors’ affecting their portfolios’ risk/return composition. This paper contributes to the deficient literature on cash dividend announcements and stock returns volatility in particular, in emerging economies such as India.63

Ghada Abbas (2015), his study “Stock Prices Reaction to Dividend Announcements: A Study on Listed Companies in the Damascus Securities Exchange”, investigate the stock prices response to dividend announcement in the Damascus Securities Exchange. The purpose of the study is to identify whether there are any significant abnormal returns around the public announcement of dividend. An event study methodology is used for an event window of forty days surrounding the announcement day. Research results indicate that most average abnormal returns are statistically insignificant, whereas the cumulative average abnormal returns are statistically significant for the whole event window. The downward drift of the cumulative average abnormal returns six days after the announcement suggests that prices don’t adjust immediately to dividend information. The stock reactions appear within post-event window gradually in response to the dividends announcement.64

A study entitled, “Study of effectiveness of Time Series Modeling (ARIMA) in Forecasting Stock Prices”, by Prapanna Mondal, Labani Shit1 and Saptarsi Goswami (2014), studied the effectiveness of Autoregressive Integrated
Moving Average (ARIMA) model, on fifty six Indian stocks from different sectors. We have chosen ARIMA model, because of its simplicity and wide acceptability of the model. We also have studied the effect on prediction accuracy based on various possible previous period data taken. The comparison and parameterization of the ARIMA model have been done using Akaike information criterion (AIC). The contribution of the paper, are a) coverage of a good number of Indian stocks b) Analysis of the models based on sectors c) Analysis of prediction accuracy based on the varying span of previous period data.65

Edward Attah-Botchwey (2014), in their study “The Impact of Dividend Payment on Share Price of Some Selected Listed Companies on the Ghana Stock Exchange” found out the impact of dividend payment and its relationship on the share price of some listed companies on the Ghana Stock Exchange (GSE) and how it helps shareholders to make an informed decision on whether to maintain or withdraw their investment and reinvest in other companies. For the purpose of the study, Eco bank, Cal Bank and AngloGold Ashanti were randomly selected out of the 36 companies listed on the Ghana Stock Exchange. About sixty (60) respondents (shareholders) were randomly selected out of the total number of shareholders of the companies mentioned above. The primary source of data was questionnaire whilst the secondary data consisted of information on dividend policy from the internet, journals such as the journal of risk finance, national tax journal, journal of finance and corporate finance. It was found out that as the dividend of companies increase, the share price also rises due to the pressure on the share. This suggest firms with higher dividend payment have their share price going up as well as a result of higher demand of shares and firms with lower dividend have their share price going down all else being equal.66

Jitendra Kumar Sharma, Vijay Shankar Pandey (2014), in their paper “Dividend Signalling and Market Efficiency in Emerging Economy - A Study of Indian Stock Market” applies GARCH (p, q) model and non-parametric Run test for studying isolated events of dividend change announcements covering a period of ten years for capturing abnormal returns in the Indian Stock Market using an event window of 61 days. The results indicate that there is no signalling effect of ‘dividend increase/decrease along with financial results announcement’ event on the share price
of companies. Cumulative abnormal return tendency is observed if share purchase is made prior to any of the events. It is also found that adjustment in prices after event date takes place with a substantial time lag reflecting inefficiencies in the market.57

Dr. JeelanBasha.V (2014), this paper entitled on “Wealth maximization: An empirical analysis of Bonus Shares and Right Issue”, an empirical analysis of impact of right issues on shareholders returns of Indian listed companies”, examined the wealth is defined as value of the shareholders equity. Wealth as reflected in the market value of the firm’s shares. The paper is a study on the bonus and right issue which are some of the important factors for maximizing shareholder’s wealth. So the basic objectives of the study are to know the relationships of bonus issue and right issue made by the company with EPS and MPS of their stocks. The results depicts that bonus issues does not make significant difference on EPS and MPS of stocks.68

Kalay, Alon and Kronlund, Mathias (2014), in their paper entitled “The Market Reaction to Stock Split Announcements: Earnings Information After All” this paper examine whether the abnormal returns around stock split announcements. The paper establishes a link between the abnormal returns and future earnings growth. Analysts revise earnings forecasts by 2.2-2.5% around split announcements, and this revision is significantly larger than that for matched firms. We further show that the earnings information in a split likely arises from the fact that splitting firms experience less mean reversion in their earnings growth relative to matched firms.69

A study entitled “Impact of the Union Budget on the Indian Stock Market” by Ishanb Harendrakumar Pandya (2014), analyzed the Union budget is perhaps the most watched event in economic policy making in India. The stock market response to budget is often viewed as an important summary statistic of the ‘quality’ of a budget in terms of improving the macro economic prospects. This study finds interplay between the budget and the stock market, in the areas like informational efficiency and implication for portfolios and trading. And it’s mainly focused by return and volatility impact along with different event window.70

The paper entitled on, “Impact of dividend announcement on the stock prices of Indian companies: An empirical evidence” presented by Nikunj Patel and Kalpesh Prajapati (2014), this study to analyze empirical evidences of stock
dividend announcement on selected 20 companies of Indian stock market and try to investigate the existence of abnormal returns. Sample data was drawn from companies listed on the BSE that have announced dividend over the period January 2008 through December 2011.\textsuperscript{71}

Yang Xiao-Xuan (2013), this paper entitled on “The Market Reaction To Stock Splits Used as Dividends”, investigated the market reaction to stock splits based on China’s A share companies between 2007 to 2010. This study found that significant positive abnormal returns around the announcement date (especially before the announcement date) as well as four to six days before the execution date of China stock splits and also observe significant negative abnormal returns just around the execution date.\textsuperscript{72}

The paper entitled on (2013), “The Impact of Increased Dividend Announcements on Stock Price: A Test of Market Efficiency,” presented by Laabs, Douglas S. and Bacon, Frank W. this study examined to test the semi-strong form efficient market hypothesis by analyzing the effects of increased dividend announcements on stock price. This type of information should impound stock price sufficiently fast to disallow any investor's earning an above normal risk adjusted return. Evidence here supports the positive signal associated with the sample of increased dividend announcements examined. However, the study results fail to support the semi-strong form efficient market hypothesis.\textsuperscript{73}

This paper entitled “Impact of Quarterly Results on Share Prices Indian,” presented by Babu and Kasilingam (2013) examined the study is to find out the effect of quarterly results on share prices of securities. The change in prices was also compared to an increase in profits reported in the quarterly results. The study results show that there was an increase in price after the result, and that an increase in price is mainly due to market conditions rather than the announcement of quarterly results. The increase or decrease in share prices was not reflected in the growth in profits announced in the quarterly results.\textsuperscript{74}

The paper entitled (2013), “Factors Influencing Abnormal Returns Around Bonus and Right Issue Announcement” presented by MadhuriMalhotra, M.Thenmozhi and Arun Kumar Gopalaswamy analyzed that market condition and type of industry have significant influence on abnormal returns and the bonus ratio does not
have any significant effect on abnormal returns. For rights announcement, issue size and market conditions have a significant impact on returns. Firm size, operating leverage, debt-equity ratio and volatility of stock returns are the other firm-related factors that have a significant impact on stock returns around bonus announcement. But for rights issue, only firm size is the significant firm-related factor which has a positive impact on the returns.75

The paper entitled, “A study on Semi-strong efficiency of Indian Stock Market” presented by Remya Ramachandran (2013) studied stock price and trading volume reaction resultant upon the corporate action information. If the market is efficient prices fully reflect all information and to evaluate there is no scope for abnormal returns and dramatic increase in the traded volume consequent upon such release of information. Here the efficiency of stock market is tested by analyzing the dissimilation of corporate event announcements like dividend, Stock Split, merger, Bonus issue.76

The paper entitled (2012), “Liquidity changes around bonus and rights issue announcements: Evidence from manufacturing and service sectors in India, “by Madhuri Malhotra, M.Thenmozhi and Arun Kumar Gopalaswamy analysed stock price liquidity changes before and after the bonus and rights issue announcements. Market depth, as measured by the liquidity ratio, has significantly decreased after the bonus and rights issue announcement in the Indian stock market. The results support cash substitution hypothesis and signaling theory but rejects liquidity hypothesis with respect to bonus and rights issue announcements.77

The paper entitled on “An empirical study on effect of bonus announcement on share price volatility and liquidity and its impact on market wealth creation of informed investors in Bangalore with special reference to CNX NIFTY stocks of NSE” presented by Suresha B and Dr.Gajendra Naidu (2012). This paper investigates the market reaction to bonus issue announcement news, using an event study methodology for Nifty stocks from 1995 to 2011. The study found out that the Indian market reacts positively to bonus issues. Also shown an increase in volumes of shares traded around the bonus issues date. There is also an increase in trading activity after the bonus announcement as compared to that before the announcement.78
A study entitled, “Dividend Announcement and Market Response in Indian Stock Market: an Event-Study Analysis”, by Maitra and Dey (2012), observed that there are significant abnormal returns (positive or negative or both) upon dividend announcement which is more evident under the CAPM model. They suggest that although abnormal returns are found significant even before the announcement of dividend both under the market model and the CAPM model, still more cumulative average abnormal returns are not found significant well before the announcement under the CAPM model while it becomes faster during the post-announcement period. Under the market model, no significant difference between positive and negative average abnormal return is observed which is suggestive of no signaling effect whereas application of CAPM model suggests signaling. The difference in results seems to be due to difference in calculating returns.\textsuperscript{79}

Andres, Betzer, Bongard, Haesner, and Theissen (2011), in their study “Dividend Announcements Reconsidered: Dividend Changes versus Dividend Surprises”, analyzed dividend announcements made by German firms in the period from 1996 to 2006. They performed a standard event study and then used random effects panel models to analyze the determinants of the cumulative abnormal returns. The results show that share prices react to the surprise in the dividend announcement, not to a dividend change per se. Their results also suggest that, when dividend and earnings announcements are made on the same day, the dividend surprise has, if anything, higher explanatory power for the share price reaction than the earnings surprise.\textsuperscript{80}

A study entitled by “Information Content of Dividend Announcements: An Investigation of the Indian Stock Market” by Taneem, and Yuce (2011), analyzed results of 82 BSE enlisted companies, which announced dividends during the financial years 2004-2007 claim that investors have a favorable reaction towards companies that increased their dividends and the vice versa for companies that declared a decrease in dividend. They thus conclude that dividend announcements have information content and induce share price adjustments. The result showed higher abnormal return and higher cumulative abnormal return for companies that increased their dividend amounts. They make strong support to the signaling hypothesis in explaining the positive price reactions in the direction of dividend change.\textsuperscript{81}
Pooja Miglani (2011), this paper entitled on “An empirical analysis of impact of right issues on shareholders returns of Indian listed companies”, this study explores the impact of right shares issued by Indian companies that took place during 2005 & 2010. The study examines the stock price reaction to information content of right issues with a view of finding whether Indian stock market is semi-strong efficient or not. The study reveals statistically significant abnormal returns on the announcement & surrounding dates.82

Martin. T. Boli, Christian.A. Salm and BerddWilfling (2011), in their paper “Do individual Index Futures Investors destabilize the underlying spot market”, investigated the individual index futures investors destabilize the underlying spot market by applying Markov- Switching GARCH model. The sample periods ran from November 1st 1994 to December 31st, 2007 for the WIG 20 and the WIG from December 31st 1994 to December 31st 2007 and for the WIG 80 from 31st December 1999 to 31st December 2007. The empirical results denoted that the coefficient sums are less than one for all stocks returns time series across both regimes.83

Stephane. M. Yen and Ming. Hsiang Chen (2010), in their study “Open interest, volume and volatility: evidence from Taiwan futures market”, investigated the relationship between open interest, volume and volatility in Taiwan futures markets to find the relationship among any variable from an ex-ante perceptive that is out of sample forecasting performance. The volatility forecasting performance of all five models such as EGARCH, GJR, APARCH, GARCH and IGARCH were compared with or without lags in total markets volume or total open interest included as predictable variables. Daily closing prices, total trading volume and open interest for the Taiwan stock exchanges, electricity sector futures and insurance sector futures from 21' July 1998 to 31st December 2007 were collected as sample for the study VAR model was applied to find relationship between each pair of three variables and found that significant relationship. These asymmetric GARCH models such as EGRCH, GJR, and APGARCH as well as the standard GARCH and IGARCH models results indicated that the significance of in sample relationship among the futures daily 1 volatilities, the lagged total volume and the lagged total open interest.84

The paper entitled on (2010), “Market Reaction Stock Splits Empirical Evidence from the Nairobi Stock Exchange” presented by Dr. Josiah Omollo
Aduda, Chemarum Caroline S.C, analyzed nine companies that had undergone stock splits in the period 2002 to 2008. The study made use of the trading activity ratio to determine whether stock splits elicit any reaction in the Kenyan market. The study found out that the Kenyan market reacts positively to stock splits, as shown by a general increase in volumes of shares traded around the stock split. There is also an increase in trading activity after the stock split as compared to that before the stock split.\(^\text{85}\)

Jyoti Sharma and Rohini Singh (2009), this paper entitled “Market reaction to bonus issues in the Indian stock market,” The aim of the study is to examine the semi-strong form efficiency of the Indian stock market and determine whether the market reacts to information regarding bonus issues. Bonus issues are expected to send positive signals to investors and hence prices are expected to rise when an issue is announced. If there is a significant predictable increase in price after the bonus announcement that can be used to make abnormal profits, the market is considered to be inefficient. The study result shows that the Indian market is semi-strong form efficient.\(^\text{86}\)

Fernando, K G K and Guneratne, P.S.M. (2009), in their paper entitled “Measuring Abnormal Performance in Event Studies: An Application with Bonus Issue Announcements in Colombo Stock Exchange (CSE)” This paper examines the stock price performance on and around bonus issue announcements in CSE over the period 1991 to 2007 using three return generating models; Market Adjusted, Constant Mean Adjusted and Risk Adjusted, with the intention of providing a methodological triangulation in the context of event studies. Despite the mere ceremonial nature of bonus issues, all three models suggest that the market responds significantly on bonus issues with a large price appreciation on the announcement day itself. Despite the mere ceremonial nature of bonus issues, all three models suggest that the market responds significantly on bonus issues with a large price appreciation on the announcement day itself.\(^\text{87}\)

UlkemBasdas (2009), in his study, “Lead lag relationship between the spot index and futures price for the Turkish derivatives exchange”, investigated the lead lag relationship between the spot index and futures price for the Turkish derivatives exchange by using ISE30 and compare the forecasting abilities of ECM, ECM with COC, ARIMA, and VAR model considering the data from February 4th
from the Turk DEX Website and the spot value also collected from the same source and for the same period. The Ganger causality test results indicated that the log of spot price significantly Granger cause log of futures but not vice versa.88

Y.P. Singh and Megha Agrwal (2009), in their study, “Impacts of Indian index futures on the index spot markets, - the Indian evidence” to understand the nature and strength of relationship between Nifty spot and index and Nifty futures to determine the direction of flow of information between Nifty spot index and Nifty futures and to establish a causal relationship between return of Nifty spot and return of Nifty futures. Data sets of the study consisted of closing price histories of Nifty futures and Nifty spot index for a period of January 2004-2007. In order to analyze the lead lag relationship between Nifty and its futures return series, cross correlation coefficients between Nifty spot return and Nifty futures for 10 lead lags were calculated. This result indicated that futures lead the spot market for Nifty.89

A study entitled “Estimating the optimal hedge ratio in the Indian equity futures market”, by Kapil Gupta and Balwinder Singh (2009), investigated information memory and pricing efficiency of futures markets to examine the information dissemination efficiency of Indians equity futures markets which is expected to provide important policy implications of regulatory bodies and help to improve the knowledge base of market participants. The weak form efficiency of three indices and 84 individual stock futures permitted for trading futures and option segments of NSE was examined for the period from January 2003 to December 2006 by considering daily closing prices of futures contracts. GARCH and EGARCH econometrics models results implied that previous information shock plays significant role in the return generation process.90

A study entitled, “A study on an econometric analysis of the lead lag relationship between India's NSE Nifty and its derivatives contracts” by Sathya Saroop Debasish (2009), examined high frequency data for the NSE Nifty stock index futures from July 2000 to June 2008 was taken as the sample for the study. Empirical results showed that the NSE Nifty stock index hourly returns have significant first order positive auto correlation and the series matched with calls and puts separately showed consistent serial correlation structure. Co integration and ARMA models were employed in the analysis part. Findings evidenced on the lead
lag relationship between the NSE Nifty index and the NSE Nifty index futures. Overall, it was clear that the futures market generally lead the index by up to one hour.91

P.Sakthivel and B.Kamaiah (2009), made a study “Futures trading and spot market volatility - A case of S&P CNX Nifty “index to investigate whether futures trading activity affects spot market volatility or not. The daily closing price of Nifty and trading volume and open interest for Nifty index futures were collected from 1St July 2000 to February 28th 2008. This study found that GARCH specification more appropriate than the standard statistical models and the results of GARCH model revealed that estimated coefficients of unexpected trading futures volume was positive and significant which indicated that there is a positive relationship between spot market volatility and unexpected trading volume in Nifty futures markets. The results of GJRGARCH model indicated a positive and highly statistically significant.92

Paul Dawson and Sotiris K. Staikouras (2009) made an investigation on “The impact of volatility derivatives on S&P 500 volatility”. The aim of the study was to examine the impact of the volatility derivatives trading on the S&P 500 volatility index to offer a fresh perspective on the issue of spot market volatility. The sample of the study consisted of daily data from January 3rd 2000 to May 30th 2008. GARCH (1, 1) estimation was applied in its analysis and found the most appropriate structure. When the whole period was split into the pre and post event date intervals the results provided a useful insight. Empirical result indicated that under normal market conditions volatility derivatives trading contributed to lowering the underlying assets.93

Vipul (2008), in his paper “Mispricing, price volatility, volume and open interest: evidence from Indian futures market “investigated the relationship between mispricing, price volatility, volume and open interest of stock futures and their underlying shares in Indian futures markets. The sample data was selected on the basis of average volume based rank of the stock futures from 1St January 2002 to 30th November 2004. The daily volatility for the futures and underlying shares was computed using Parkinson's formula and it , showed that the variance of daily return can be estimated more efficiently using the extreme value estimator. The result indicated that any increase or decrease in mispricing did not lead to the significant change in volatility, volume of open interest for any of the futures or underlying shares.94
A study entitled “Tax effects on the pricing of Australian stock index futures”, by James Richard Cummings and Alex Frino (2008) made an investigation on the tax effects on the pricing of Australian stock index futures. To adapt and extend the framework adopted by Cannavan, Finn and Gray (2004) data for 1st January 2002 to 15th December 2005 have been taken. S&P/ASX 200 stock index values, time-stamped approximately 30 seconds apart, were also considered. Daily series for the overnight cash, 30, 90 and 180 days bank accepted bill rates had taken from the RB of Australia. In the Australian markets, the timing option held by stockholders to different capital gains and realize capital losses possibly accentuates the reduction in the effective financing cost brought about by the tax deductibility of interest on loans.95

A study entitled, “The efficiency of Greek stock index futures markets, Managerial Finance” by Christos Floros and Dimitrios V. Vougas (2008), analyzed the efficiency of Greek stock index futures market by addressing the issue of co-integration between Greek spot and futures market over the period of 1999-2001. The short run efficiency was examined by several Error Correction Models and long run efficiency was tested through Johansen Co-integration approach. 525 daily observations on the FTSE/ASE 20 stock index and stock index futures contracts, 415 daily observations on the FTSE/ASE mid 40 stock index and index futures contracts were considered. Granger two step analyses indicated that both spot and futures are Co-integrated, implying market efficiency. The results of VEC model for both FTSE/ASE 20 and FTSE-ASE mid 40 indicated that futures lead spot return and it is confirmed that futures markets are informally more efficient than underlying stock market in Greece.96

Ramana Rao.S.V. (2007) in his paper “Impact of financial derivatives products on spot market volatility: A study on Nifty” examined the impact of financial derivatives products on spot market volatility. This study examines the empirical relationship between financial derivatives products and the nifty spot market volatility. There are two contradicting schools of thoughts on this issue. One school advocates that the derivatives products destabilize the spot market, while the other school opposes this. This analysis is done by using the GARCH models to study volatility between June 1999 and December 2005. The empirical evidence is mixed...
and the results suggest that there was enhancement in the volatility of spot market index in the post-derivative period.97

Suchismita Bose (2007), in his study “Contribution of Indian index futures to price formulation in the stock markets”, the authors analyzed Indian stock index and Indian futures price returns for the period of March 2002 to September 2006. In order to examine that the index futures price provide any information that contribute to the adjustment process of the stock index, daily closing prices of the futures contracts on the S&P CNX Nifty index and the underlying index values were taken for the analysis. The cross correlation matrices indicated that futures markets leading the spot markets with a day lag, while the reverse was not true. This study showed that the futures markets information showed the price discovery of the underlying Nifty is marginally higher than what Nifty contributes to its futures price discovery.98

M. Illueca and J.A.Lafuente (2007) made an investigation on “The effect of futures trading on the distribution of spot index returns implications for CVAR in the Spanish market”. Data on the ibex 35 spot and futures markets were provided by MEFFRV for the period January 17th 2000 to December 20th 2002 was taken in to consideration. ARIMA and GARCH model were employed to accomplish the objectives. The empirical findings for the Spanish mark revealed that futures trading activity is a significant variable to explain the density function of spot returns conditional to spot trading volumes. The results confirmed that futures markets significantly contribute to the price discovery process regardless the day of the week.99

Taufiq Hassan, Shamsher Mohammed, Mohammad Ariff and Annuar M.D Nassir (2007) investigated “Stock index futures prices and Asian Financial Crisis”; the author's referred to the Asian Financial crisis in July 1997 as the East Asian Region to introduce stock index futures contracts. For the data of KLCI index and KLCI index futures contracts were used. The sample period of the study was from January 1996 to December 2001 they examined whether derivatives trading by either a domestic or a foreign investors have any influence on these prices. Findings indicated that after financial crisis, the stock market was extremely volatile and many legal restrictions were imposed on the capital market which makes the arbitrage very risky Keim and Madhavan's (1996) method was used to define permanent and temporary price impacts associated with a domestic institution which suggests large temporary price impacts.100
Sibani Prasad Sarangi and Uma Shankar Patnaik (2007) in their paper “A study on the impact of futures and options on spot market volatility: A case of S & P CNX Nifty index” analyzed the impact of futures and options on spot market volatility. The sample data consist of daily opening and closing price returns of S & P CNX Nifty, nifty junior and S & P 500 index from January 1, 1997 to March 31, 2005. This paper uses OLS and family of GARCH techniques to capture the time-varying nature of volatility and volatility clustering phenomenon in the data. The results suggest that there are no significant changes in the volatility of the spot market of the S & P CNX Nifty index, but the structure of volatility has changed to some extent. It has also found that the new information is assimilated into prices more rapidly than before and there is a decline in the persistence of volatility since the inception of futures trading.

Christos Floros (2007) in his paper “Price and open interest in Greece Stock index Futures Market, Journal of Emerging Market Finance” made an investigation on price and open interest in Greece Stock index Futures Market with an aim to provide further case study of interesting country Greece to go beyond GARCH, Johansen and Granger Causality econometrics techniques. 525 daily nearby observations on the FTSE/ASE 20 stock index futures contracts from August 1999 to August 2001 and 415 daily nearby observations on the FTSE/ASE40 stock index futures contracts from January 2000 to August 2001 were taken into consideration for the analysis. The results of co-integration relationship between daily price and open interest for Greek futures markets showed that open interest as a proxy in the conditional variance helps in explaining the GARCH effects in futures markets return.

Ash Narayan Sah and G. Omkarnatk (2007) made a study on “Derivatives trading and volatility”. This study tried to understand whether the Indian stock markets show some significant changes in the volatility after the introduction of derivatives trading and also examined whether decline or rise in volatility can be attributed to introduction of derivatives alone or due to some economic reasons. The study used daily data like S&P Nifty, Junior Nifty, NSE 200 and S&PCNX 500, BSE Sensex-BSE 100, BSE 200 from the period April 1998 to March 2005. Autoregressive conditional Heteroskedastic (ARCH) model was applied to achieve the stated objective. The study concluded that the impact of the introduction of the futures and
options of the volatility of the underlying markets was negligible as evident from the magnitude of the coefficient of the futures and options dummies.\textsuperscript{103}

The paper entitled, \textit{“Stock-Split Post-Announcement Returns: Under reaction or Market Friction?”} by Rodney D. Boehme and Bartley R. Danielsen (2007), analyzed the relationship between stock splits and subsequent long-term returns during the period from 1950 to 2000. It was found that, contrary to much previous research, firms do not exhibit positive long-term post-split returns. Instead, result showed significant positive returns after the announcement date do not persist after the actual date of the stock split. The study observed that abnormal returns are correlated with the price-delay or market friction. Thus study concludes that the stock-split post-announcement "drift" is only of short duration, and it is attributable to trading frictions rather than behavioral biases.\textsuperscript{104}

Consuelo Riano, Fco. Javier Ruiz, Rafael Santamaria in their paper, \textit{“Determinants of the under pricing of new shares during the subscription period: empirical evidence from the Spanish stock exchange”} on (2007), analyzed the share prices during the subscription period are influenced by a range of factors, such as difference in the amount of tax to which subscription rights and capital gains are subject, characteristics of the issuer and the issue, norms established between clients and banks and the microstructure of the subscription rights market.\textsuperscript{105}

The paper entitled on (2007), \textit{“Announcement effect of rights issue on stock returns: A study of selected Indian manufacturing companies”}, presented by Malhotra, Madhuri; Thenmozhi, M.; Kumar, G. Arun, examined ordinary share price abnormal returns reaction to announcements of rights issues in the Indian Stock Market. The results of the study show that Indian stock market reacts positively to the announcement of rights issue and there is no information leakage prior to the rights issue in India. There is little evidence on the Indian stock market being semi strong form efficient.\textsuperscript{106}

A study entitled, \textit{“Impact of Dividend Announcement on Share price”} by Ramesh Chander, Renuka Sharma and Kiran Mehta (2007) inferred that dividend income does not inspire the over-enthused investors in the rising capital markets. Under these conditions, market participants are more destined to abnormal returns by devising investment strategies on the fundamentals, rather than on technical analysis.\textsuperscript{107}
Amitabh Gupta (2006) in his work entitled “The Share Price Behavior around Buy- back in India” studied the listed companies in India during the period January 1999, to March 2004. In this study, it was observed that the announcement of share buy backs, significantly increases the prices of shares around the time of announcement and large companies generate lower abnormal returns than small companies. The findings have important implications for corporate financial and investment strategies.108

Lars Norden (2006) made an investigation on the topic does “Does an index futures split enhance trading activity and hedging effectiveness of the futures contract”, All futures contracts with the omex- index as underlying securities at OM from October 246 1994 to June 29th 2001 were considered for the study Bivanate GARCH model was applied to obtain a measure of the optimal futures hedge ratio and the estimation results for stock index return revealed that there is strong evidence of conditional heteroskedastisity in both the stock Index and the futures.109

Kedar Nath Mukherajee and K. Mishra (2006) made an empirical study on the topic “Lead lag relationship between equity and stock index futures market and its variation around information release- empirical evidence from India”. The main objective of the study was to investigate the lead lag relationship between the spot and future markets in India, both in terms of return and volatility Intraday price histories for the nearby contract of Nifty index futures, Nifty cash index and also the price of some specific component stocks during April to September 2004 were considered for the analysis. VAR model and the Granger Causality test among the return series of the spot and the future markets results indicated that on the volatility spill over among the spot and future market in India and also revealed that a symmetric spill over among the stock return volatility in Indian spot and future markets.110

Jangkoo Kang, Chang Joo Lee and Soonhee Lee (2006), in their study “An empirical investigation of the lead lag relations of returns and volatility among the KOSPI-200 spot, futures and option markets and their explanations”, investigated 200 Spot, Futures and Option markets. This study empirically investigated the intraday price change relations in the KOSPI 200 index markets, the KOSPI 200 futures market and the KOSPI 200 option market by taking the sample from 1St October 2001 to 30th December 2002. The correlation between the stock index return
and the futures returns between the stock index return and the implied forward returns are smaller. This revealed that option and futures markets lead the spot markets by around 5 minutes, while the spot markets lead the futures markets to a much weaker degree of around 5 minutes.111

A study entitled “Does futures trading impact spot market volatility: Evidence from Indian financial market” by Singh.Y.P and Shalini Bhatia(2006) showed that daily spot market volatility using GARCH model in India has marginally declined since the introduction of futures trading in India. The study also shows a simultaneously significant improvement in the information coefficient α and reduction in β, the persistence coefficient that proves the growing efficiency of the Indian stock market. The study seeks to break new ground by examining the expiration-day effect of futures trading on spot market volatility and contends that contrary to experience elsewhere, there is a significant, albeit small, decline in daily volatility on expiration day.112

Spyros. I. Spyrou (2005) in his study “Index futures trading and spot price volatility, evidence from an emerging market”, investigate whether the introduction of futures trading leads to increase volatility and uncertainty in the underlying markets for an important European emerging equity market that is Athens stock Exchange. For empirical analysis daily closing prices for the main markets index, the FTSE/ASE 20 for the period September 2003 were employed. The results from GARCH (1, 1) model indicated that all coefficients are significantly for both periods, when both coefficients are slightly increased for the post futures periods and Alpha is slightly increased and CI is slightly reduced. Wald test results revealed that there is no statistically significant effect on volatility following the introduction of futures trading.113

Sponholtz, C. (2005) in his study “Separating the stock market’s reaction to simultaneous dividend and bonus announcements” found that stock market reaction to the simultaneous announcement can be explained by the component of surprise contained in the current dividend and the management’s forecast of next year’s earnings.114

Karamjeet Kaur and Balwinder Singh (2005) in his study “The Stock Price Reaction to Dividend Increase Announcements” examined with the help of weekly observations. It gives similar positive stock price reaction to dividend increase
announcements. Further, the positive stock price reaction is analyzed for information signalizing theory. But empirical results are inconsistent with information signalizing hypothesis.\textsuperscript{115}

A study entitled “An Empirical Analysis of Market Reaction Around the Bonus Issues in India” by Mishra, Asim(2005), analyzed the stock price reaction to the information content of bonus issues with a view of examining the Indian stock market is semi-strong efficient or not. The period of the study is June 1998 to August 2004. The results indicate that there are significant positive abnormal returns for a five-day period prior to bonus announcement in line with evidence from developed stock market. The results provide stronger evidence of semi-strong market efficiency of the Indian stock market.\textsuperscript{116}

Barnes, Michelle L. and Ma, Shiguang (2004), in their paper entitled “The Behavior of China’s Stock Prices in Response to the Proposal and Approval of Bonus Issues” analyzed event study analysis is applied to investigate stock price reaction to the announcement of bonus issues for the emerging stock markets of China. Results show that the issues with a high bonus ratio usually attract positive returns. Issues with a low bonus ratio are rewarded with negative returns.\textsuperscript{117}

A study entitled “Information content of extended trading for index futures”, by Louis. T.W. Cheng, Li. Jiang and Renne W.Y. Ng (2004), in this study the authors employed the S&P 500 and Hang Seng London reference index to control for a possible spillover effects. Minutes by minute's quotes of the HSI from Hang Seng Index services limited and HSIF transaction data from the Hong Kong Exchange were obtained for the period of 20th November 1998 to 31St May 2000. Weighted Period Contribution (WPC) was used to measuring the price discovery in the extended trading sessions. Futures return innovations from the post close trading sessions were extracted by using a GARCH (1, 1) model. The explanatory power of the futures returns innovations of the post- close and pre-open sessions on over night spot returns were examined and information content of extended futures trading results showed that pre-open futures innovations had a positive impact on overnight returns.\textsuperscript{118}

Irena Ivanovic and Peter Howley (2004) in their study “Examining the forward pricing function of the Australian equity index futures contracts” in this study authors investigated the extent to which Australian stock index futures prices
with varying terms to maturity are unbiased estimator of spot index values and examined Australian equity futures contracts with six different terms of maturity and investigated the relationship between futures and spot values. The settlement prices of futures contracts and spot prices of Sydney futures Exchange and its corresponding spot price were taken for the period of 1983 to 2001 The OLS, Johansen Cointegration and Vector Error Correction Model were employed in the empirical analysis and found that Australian equity index futures price are Cointegrated with the subsequent spot values for one, two, three, six, nine and twelve months to maturity.\textsuperscript{119}

Nupur Hetamsaria and Saikat Sovan Deb (2004) in his study “Impact of index futures on Indian stock market volatility: An application of GARCH model” studied the impact of the introduction of stock index futures in the volatility of the Indian spot markets. The issues addressed in this paper are: firstly, does the introduction of stock index futures reduce stock market volatility secondly, if there is a reduction in the volatility of the stock market post futures, are there no other reasons that could have caused such a reduction thirdly if their future effect confirmed, is the effect immediate or delayed. The amended GARCH model is used to study the above objectives. There results obtained show that the results remain consistent with the studies for other emerging markets. That is, the introduction of future results in a reduction in stock market volatility. Apart from the introduction of stock index options, there are no other factors that had caused this reduction. However we found that the futures effect is delayed on NSE.\textsuperscript{120}

A study entitled “Impact of index derivatives on S & P CNX Nifty volatility: information efficiency and expiration effects” by Thenmozhi. M and Sony Thomas. M (2004) examined the impact of derivatives trading and cash market volatility in the Indian context. The volatility is examined considering the day-of-the week effect, domestic market factors and world market movements using GARCH models. The change in volatility and information efficiency is examined for pre and post derivatives period. The analysis shows that the introduction of index futures and options has reduced spot market volatility. Persistence of volatility is reduced in post-derivatives period and day-of-the week effect is found to be insignificant after the introduction of derivatives. The results provide evidence of increased market efficiency in the Indian stock market after the introduction of derivatives. The study
shows that both S & P CNX futures and options contracts have a stabilizing effect on the underlying stock market and supports the “market completion” hypothesis and rejects the “destabilizing forces hypothesis”.\(^{121}\)

A study entitled “Resiliency ability of the underlying spot markets in Hong Kong after the introduction of index futures contracts-Evidence from Hong Kong” by Andy. C.N. Kan (2004), provided an empirical analysis for the impact of the HSI futures trading on the resiliency ability of individual HSI constituents stock in the Hong Kong stock index which is the important financial markets in the Asian Pacific region. A cross sectional regression model was employed in the study for investigation after controlling some important factors. Daily stock price and return from 6th May 1980 to 5th May 1992 of HSI were taken for the analysis. Results of regression model in the four different sampling intervals indicated that the increase in the liquidity ratios of the HIS constituent stocks is significantly greater than that of the non-constituents stocks from the pre-futures to the post futures periods after controlling other relevant factors.\(^{122}\)

Raymond W. and Yiuman Tse (2004), a study entitled “Price discovery in the Hang Seng Index markets, index futures and the tracker fund”, the objective of the study was to extend of their understanding of information processing by investigating how information is transmitted among the Hong Kong Hang Seng index markets. They also examined the volatility spillover effects of the three markets via a multivariate GARCH model. Minute by minute data of the Hang Seng index from November 12th 1999 to June 28th 2002 were taken in to consideration. The result of Gonzalo and Granger model showed that the futures market is the main driving force in the price discovery process, followed by the index. Multivanate GARCH model indicated that the volatility of the index and futures market spill over to each other to the strong effects from the futures to the index markets.\(^{123}\)

Dimitris F. Kenourgios (2004), in his study, “The price discovery in the ATHENS derivatives exchange – Evidence for the FTSE/ASE-20 Futures markets”, the purpose of the study was to examine the informational linkage between the FTSE/ASE-20 stock index and its three months index futures contracts. Johansen co integration, Vector Error Correction and Wald test models were applied here for its estimation. Price data on the stock index and three months FTSE/ASE-20 index
futures contracts from Athens stock exchange and Athens derivatives exchanges for the period from August 1999 to June 2002 were considered. The findings suggested that both the markets are co-integrated, there is bi-directional relationship between both markets and there is informational linkage among them and futures contracts could be used as price discovery vehicles in the Greek capital markets.\(^\text{124}\)

A study entitled “Informational content of trading volume and open interest-an empirical study of stock option market in India”, by Sandeep Srivastave (2003) to examine the role of certain non price variables namely open interest and trading volume from the stock option market in determining the price of underlying shares at cash market. For the analysis call option and put option open interest and volume based predictors were used. The sample of the study includes daily data on 15 individual stocks which were most liquid stock option in the NSE option market from November 2002 to February 2003 and it was found that these predictors have significant explanatory power with open interest being more significant as compared to trading volume.\(^\text{125}\)

Nupur Hetamsaria and Niranjan Swain (2003) in their paper “Impact of the introduction of futures market on the spot market: An empirical study” tested how the introduction of index futures affects the underlying market. The relative volatility of Nifty index pre and post futures and relative volatility of the two markets (futures and spot) have been studied and tested for statistical significance by using F-test. A multiple regression model was used to test the impact of the introduction of futures market on the spot market. The empirical evidence suggests that the introduction of futures market does not destabilize the underlying market, that there is a decline in volatility. The relative volatilities of the two markets are not statistically different. The paper also studies other empirical research done in developed markets, emerging markets and the Indian markets.\(^\text{126}\)

A study entitled “Price discovery and volatility on NSE futures market” by Raju. MT, et al (2003) examined the price discovery between the S&P CNX Nifty and its corresponding futures using co-integration analysis. This analysis measures the extent to which two markets have achieved long run equilibrium. They also examined the effects of introduction of S&P CNX Nifty index futures on the underlying spot market by using the ARCH family of models to study volatility between June 2000
and October 2002. They found that both the cash and futures market are integrated; information flows from one market to another, with information being reflected first in the futures market, and the results indicated that the volatility was reduced after the introduction of index futures.\textsuperscript{127}

Premalata Shenbagaraman (2003) in her paper “Do futures and options trading increase market volatility” examined the impact of the introduction of NSE Nifty index futures and options on Nifty. She considered daily closing prices between October 5, 1995 to December 31, 2002 and used univariate GARCH (1, 1) model to examine the impact of index futures and options contracts on volatility. To remove the effects of economic factors like inflation rates, growth forecasts and exchange rates, the author used Nifty junior as a perfect control variable to isolate market-wide factors and thereby focus on the Nifty volatility. Further the lagged S &P 500 index returns is also introduced into the conditional mean equation so that the effects of global price movements are nullified. The author tested the volatility before and after the introduction of derivative products. The results indicate that derivatives introduction has had no significant impact on spot market volatility. By using pre- and post-futures period analysis, the author concluded that the effect of information was persistent over a time period before futures where this is not true after futures introduction.\textsuperscript{128}

Golaka C. Nath (2003) in his study “Behavior of stock market volatility after derivatives” studied the behavior of stock market volatility after derivatives for indices, as well as individual stocks. The study captured the impact of the introduction of derivatives trading over a longer period of time, i.e., from January 1999 to October 2003. The author has used two bench mark indices, S & P CNX Nifty, S & P CNX Nifty Junior and 20 selected stocks, 13 of which have single stock futures and options. The study revealed that volatility, as measured by standard deviation came down for most stocks after derivatives. He concluded that changes in the micro structure, robust risk management practices to contain volatility, and introduction of derivative products might have led to the reduction of volatility.\textsuperscript{129}

Roland Mester, Henryk Gurguf (2003), ARIMA Modeling of Event Induced Stock Price Reactions in Austria, In this paper an event study is conducted to examine stock price reactions on corporate news announcements using data from
the Austrian stock market. In line with several contributions on other stock markets we choose as news the very first announcements of dividend changes of Austrian companies. Abnormal returns are computed as the difference between actual returns and expected returns generated by ARIMA time series models. The results are the first on that issue for the Austrian stock market. They corroborate the findings on other markets: dividend increases are good news to the market. Inducing stock prices to rise, whereas cuts in dividends lead to price decreases. Furthermore we find that the volatility of stock returns increases in case of announced dividend decreases. In addition we test the ARIMA model assumptions of abnormal returns.\(^{130}\)

The study entitled, “Stock Splits: Motivation and valuation Effects in the Spanish Market” presented by Susana Menendez Silvia Gomez-Anson (2003), investigates the motivation and valuation effect of stock split in a medium-sized market such as the Spanish market. The study suggest that splitting firms present a pre-split stock price above the normal trading range and that after the split the number of transactions and the average transaction size increase significantly.\(^{131}\)

A study by Thenmozhi M (2003) entitled “Futures, trading, information and spot price volatility of NSE-50 index futures contract” analyzed the volatility of spot market before and after introduction of the stock index futures, and also the lead lag relationship between stock index futures and spot index returns with the help of data between June 15, 1998 and July 26, 2002. The standard deviation of daily returns has been used to assess the impact of derivatives on spot market volatility. The author felt that GARCH model is not relevant for measuring volatility, since the study period is short. The author concluded that volatility in the post-futures period has been on the decline. In this study NSE-50 junior was used as a proxy to capture market wide influence on price volatility, as it is not very highly correlated with NSE-50 index. The study proves that there is a possibility of increase in the information flow that has influenced the market returns in the post futures period.\(^{132}\)

A study entitled, “The Effect of the introduction of CUBES on the NASDAQ-100 index spot – futures pricing relationship” by AlexandeA.Kurov and Donnis J. Lasser (2002), This study used tick by tick transaction data for Nasdaq-100 futures and 15s interval data for the Nasdaq-100 index from July 1\(^{st}\) to October 20\(^{th}\) 1991. The entire sample period was divided in to two sub periods about
eight months each such as before the introduction of cubes and after the introduction of cubes. To compute the mispricing series futures prices are synchronized with the spot index value using a MIN SPAN procedure suggested by Hariris, Melnish and Wood (1995) was applied. On the basis of this result it was clear that simulated arbitrage trades becomes much riskier in the post cube periods and introduction of cubes had reduced the effective transaction cost needed to form the spot futures market arbitrage portfolios.133

A study entitled, “A case of US and India” by K.Kiran Kumar and Chiranjith Mukhopadyay (2002), made a comparative study on short term dynamic linkage between NSE Nifty and NASDAQ composite in India and US to empirically investigate the short term dynamic linkage between NSE Nifty in India and NASDAQ composite in US during the period of 1999-2001 by using intra daily data which determine the day time and overnight returns. The authors employed two stages GARCH Model and ARMA-GARCH Model to capture the mechanism by which NASDAQ composite daytime return and volatility had an impact on not only the mean but also on the conditional volatility of Nifty overnight returns. The Granger Causality result indicated unidirectional Granger Causality running from the US stock market to the Indian stock market. Further it found that the previous day time returns of both NASDAQ composite and NSE Nifty had significant impact on the NSE Nifty over night returns.134

A study entitled “Modeling linkage between Australian financial and futures markets, Australian Journal of Management” by Sang Bae Kim, Francies In and Christopher Viney (2001), the authors made an attempt to empirically analyze the dynamic interdependence and volatility linkage between the Australian stock, bond and money market futures contracts traded on the Sydney futures exchange using a Multivariate E-GARCH representation. The data set of the study consists of daily settlement price for each contract obtained from the Sydney Futures Exchange for the period from 4th January 1988 to 23rd December 1999. In the initial stage, the authors examined the raw futures markets data and the univariate (GARCH (1,1), again the diagnostic test suggested by Eagle and Nag was employed to check whether there is a potential asymmetry of volatility response to past innovations. The empirical results concluded that there exists a strong multidirectional influence among all three markets.135
Leo Chan and Donald Lien (2001), in their study “Cash settlement and price discovery in futures markets”, examined the effects of cash settlement ability of the futures market to predict futures spot price was thoroughly examined here. Vector Auto Regression model with Error Correction was applied to analyze the data. They collected cash and futures price data from September 1977 to December 1998 from the commodity system Inc. Tuesday cash price and nearby futures price data were taken for the analysis. It was found that the feeder cattle futures contract improved its price discovery function after the cash settlement was adopted.136

The paper entitled on (2001), “How Stock Splits Affect Trading: A Microstructure Approach,” presented by David Easley, Maureen O'Hara, and Gideon Saar, examined to find that stock splits attract uninformed traders. However, also find that informed trading increases, resulting in no appreciable change in the information content of trades. While study find an increase in the number of executed limit orders, their effect is overshadowed by the increase in the costs of executing market orders due to the larger percentage spreads. On balance, the uninformed investors’ overall trading costs rise after stock splits.137

The paper entitled “Bonus share issues and announcement effect: Australian evidence,” by Balasingham Balachandran and Sally Tanner (2001) analyzed share price reaction to announcement of bonus share issues of Australian companies. Price reaction to bonus issue announcements from the day of the announcements to the day after the announcements (day 0 to day 1) is statistically significant and positive of average 2.37% for uncontaminated events and 2.11% for contaminated events employing the market model. The study found that there is no statistically significant difference of price reaction between these two groups. However, price reaction to bonus issue announcements is statistically significantly stronger for industrial non-financial companies and mining companies than financial companies. Pre-announcement effect was found only for industrial non-financial companies and financial companies that announced bonus issues simultaneously with other market sensitive information such as interim or final results. The magnitude of price reactions to bonus issue announcements is statistically related to the size of the bonus issues and the pre-announcement effect.138
Gupta, Pradeep (2001) in his study “A Study of Stock Market Efficiency in India” studied the semi-strong form of efficient market hypothesis with the help of selected accounting variables. It has been found that the dividend per share had significant correlation with the market prices. However, the returns on equity did not show significant influence and the growth in price earnings ratio showed little evidence. Likewise, the growth in earnings per share and leverage had negligible influence in explaining the underlying share prices.139

M.Kakati (2001) in his study “The study on Price Performance of Bonus Issues” discussed the pre and post announcement period of 115 stock issues bonus between the period January 1995 and March 1999. This study tried to identify the factors influencing performance of bonus issues and unearths two factor, equity base and sales performance, as the most influencers of bonus performance. The industry performance, floating stock level, current EPS, P/E ratio, dividend, net profit and book value are found to have least influence on the bonus performance.140

Chaturvedi (2000) in his article “Half Yearly Financial results and Behavior of Share Prices in India” discussed P/E ratios in the pre-and-post announcement period of 90 stocks listed on the Bombay stock exchange. The author observed that two-thirds of the post-announcement cumulative abnormal returns occurred in the control period of 21 days to 40 days, implying that stock prices do not adjust rapidly to the P/E information.141

Alex Frino, Terry Walter and Andrew West (2000), in their study “The lead lag relationship between equities and stock index futures market around information releases”, examined the share price index futures contracts on the Sydney futures exchange and Australian stock index exchange were taken as the data for the period of 1st August 1995 to 31st December 1996 The empirical results implied that both adjustment for infrequent trading work as expected, although there is some evidence that the midpoint index adjustment may perform better This study provided evidence that the lead lag relationship between return on stock index and stock index futures are influenced by the release of the macroeconomic and stock specific information.142

Christian Wulff. (1999) in his paper “The Market Reaction to Stock Splits - Evidence from Germany “examined the market reaction to stock splits using a set of German firms. Consistent with the U.S. findings, similar effects are observed for
the sample of German stock splits. Institutional differences between Germany and the U.S. allow disentangling the three main hypotheses on the announcement effect - signaling, liquidity, and neglected firm hypothesis – to gain further insights into their relative. Thus, the observed market reaction cannot be attributed to measurement problems caused by thin trading.\textsuperscript{143}

A study entitled “Index futures trading and stock return volatility of Midcap-400 index futures” by Tina. M. Galloay and James M. Miller (1997), investigated the index futures trading and stock return volatility of Midcap 400 index futures. This study presented new evidence on the relation between index futures trading and volatility in the equity market using the S&P Midcap 400 stock index and Midcap 400 index futures. Daily data and trading volume data were obtained from separate period such as pre index period that is before June 1991, interim period which includes 175 trading after June 5th 1991 but before February 13\textsuperscript{th} 1992 and post futures which includes after February 13\textsuperscript{th} 1992 To determine changes in return volatility, Skinners methodology was employed. The analysis indicated that the documented decrease in return volatility for the Midcap 400 stocks is simply a reflection of a decrease in return volatility that affected all medium capitalization stocks.\textsuperscript{144}

Agarwal (1991) in his study on “Dividend and Stock Prices: A Case Study of Commercial Vehicles Sector in India 1966-1987” studied market efficiency to analyze the behavior of dividends and share prices of selected automobile companies. In this study, it was observed that the current dividend behavior is explained by current level of net profits and past two years dividends. Three and four years lagged dividends were also tried to explain current stock prices but were found to be statistically insignificant.\textsuperscript{145}

The Paper entitled on (1988), “Stock Split, Stock prices and transaction costs” presented by Michael J Brennan, Thomas E Copeland, analyzed relation between the stock trading cost and stock prices. The signaling model is estimated using a large sample of splits and explains a substantial fraction of the split-announcement returns.\textsuperscript{146}

A study entitled, “The valuation effects of stock splits and stock dividends”, presented by Mark S. Grinblatt, Ronald W. Masulis, Sheridan Titman(1984), examined stock prices, on average, react positively to stock dividend and stock split
announcements that are uncontaminated by other contemporaneous firm-specific announcements. Both announcement and ex-date returns were found to be larger for stock dividends than for stock splits. While the announcement returns cannot be explained by forecasts of imminent increases in cash dividends.\textsuperscript{147}

Stephen J. Brown, Jerold B. Warner (1980), in their paper “Measuring Security Price Performance” analysed stock return data are employed to examine various methodologies which are used in event studies to measure security price performance. We find that a simple methodology based on the market model performs well under a wide variety of conditions.\textsuperscript{148}

CONCLUSION

Chapter- III, Review of Literature, includes concepts and previous studies related to study area and have been dealt with. In next chapter, Chapter – IV analysis and interpretation of the impact of announcements of corporate actions in the Derivatives Market in India have been dealt with.
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