CHAPTER 1
INTRODUCTION AND RESEARCH METHODOLOGY

- Index:
  1.1 Introduction .......................... 2
  1.2 Statement of the Problem .......... 4
  1.3 Importance of the Study and Selection of the Subject .......................... 7
  1.4 Objectives of the Study ............ 10
  1.5 Scope and Limitations of the Study .................................................... 10
  1.6 Important Definitions and Concepts ..................................................... 13
  1.7 Hypotheses of the Study .......... 17
  1.8 Research Methodology .............. 18
      1.8.1 Primary Data ................... 18
      1.8.2 Secondary Data ................. 21
  1.9 Review of Literature .............. 22
  1.10 Statistical Tools .................. 26
  1.11 Chapter Scheme .................... 27
CHAPTER 1
INTRODUCTION AND RESEARCH METHODOLOGY

1.1 Introduction:

Theoretically, ‘Derivatives’ are financial instruments whose values depend on the values of other, more basic underlying assets. They do not have value of their own & they derive their values from another asset or multiple of assets. Derivatives are useful in reallocating risk either across time or across individuals with different risk bearing preferences. The underlying asset can be equity, forex, commodity or any other asset class.

The current study is carried out on only the equity derivatives i.e. derivatives where the underlying is equity shares traded on the stock exchanges. The equity derivatives trading in India initially was offered by two stock exchanges namely National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) in June 2000. Subsequently, MCX Stock Exchange (MCXSX) was allowed to offer equity derivatives trading in India in 2012.

"Derivatives have been around in the global market for a very long time. The evidence of characteristics of derivative contracts can even be found in the incidents that date back to the ages before Jesus Christ and in India in epic as old as Mahabharata. The first recorded instance of futures trading appears to have been occurred with Yodoya rice market in Osaka, Japan around 1650."¹

“The Chicago Board of Trade (CBOT), the largest derivatives exchange in the world, was established in 1848 in United States of America where forward contracts on various commodities were standardized around 1865. In 1865, the CBOT went further and listed the first ‘exchange traded’ derivatives contract in the U.S., these contracts were called ‘futures contracts’.”²

Due to growing instability in the financial markets, the financial derivatives gained prominence after 1970. “The first major innovation occurred in February 1972, when the Chicago Mercantile Exchange (CME) began trading futures on currencies. The biggest increase in derivatives trading activity was observed subsequently in the 1970s when futures on financial
Instruments started trading in CME. However, in the last 40 years derivatives have become increasingly important in finance. Futures and Options are now traded actively on many exchanges throughout the world since April 1973, when the CBOT formed the Chicago Board Options Exchange (CBOE) to trade options on common stocks. This was the first time an option was traded on any exchange in the world. In the 1980s, futures began trading on stock market indexes such as the S&P 500 (Standard & Poor’s 500) which is a stock market index based on the common stock prices of 500 top publicly traded American companies.3

However, as compared to traditional securities market, regulated “Derivatives Market” is a recent development in India. The stock exchanges in India have been in existence for more than a century now. Bombay Stock Exchange (BSE) is a stock exchange located in Mumbai, Maharashtra and was established in 1875. Subsequently, the National Stock Exchange (NSE) was set up in November 1992. “The road for stock exchange traded derivatives contracts was cleared with the removal of prohibition of options on securities by way of amendment to Securities Laws through Securities Laws (Amendment) Ordinance, 1995. A Bill was introduced on October 28, 1999 and was converted into an Act on December 16, 1999 making way for derivatives trading in India.” 4

The Securities and Exchange Board of India (SEBI) had appointed Dr. L.C. Gupta Committee in November, 1996 to develop appropriate regulatory framework for derivatives trading in India which submitted its report on Derivatives in March 1998. SEBI subsequently appointed a Committee under Prof. J R Varma to recommend measures for risk containment in derivatives market in India.

“SEBI granted final approval for exchange traded derivatives trading in India in May 2000 and the derivatives trading commenced in India in June 2000. To begin with, SEBI approved trading in index futures contracts based on S&P CNX Nifty Index and BSE-30 (Sensex) Index. In June 2000, exchange-traded equity derivatives were introduced at the two national stock exchanges, National Stock Exchange (NSE) and Bombay Stock Exchange (BSE). This was followed by approval for trading in options based on these two indices and
options on individual securities. The trading in index options commenced in June 2001. The trading in Stock Options commenced in July 2001 & trading in Stock Futures commenced in November 2001. The approval for trading Interest rate Futures was given in June 2003.\textsuperscript{5}

A number of research studies have been carried out to find out risks inherent in derivative operations. There are various risks such as Credit Risk, Market Risk, Liquidity Risk, Operations Risk, Legal Risk, Systemic Risk and Settlement Risk found to be embedded in the derivatives operations. Many different types of forward contracts, swaps, futures options, structured products and others are regularly traded in the market by investors, financial institutions, mutual funds, fund managers and others on the over-the-counter market. The derivatives market has become so vast that it has even overtaken the trading activity observed in the underlying market. The participants in the equity derivatives markets are mainly banks, financial institutions, corporate bodies, brokers, individuals etc. These participants can be classified into three categories: (a) Hedgers, (b) Speculators and (c) Arbitrageurs.

“Since the introduction of derivatives market in India in 2000, the market has grown at a very fast rate. The NSE has improved its ranking since then in terms of traded volumes in futures and options taken together, improving its worldwide ranking from 15th in 2006 to eighth position in 2008, seventh in 2009, and fifth in 2010. In 2010, the National Stock Exchange (NSE) stood at rank 9 in terms of market capitalization with the market capitalization of 1597 billion USD. In terms of the number of single stock futures contracts traded in 2010, the NSE has held the second position globally. It was second in terms of the number of stock index options contracts traded and third in terms of the number of stock index futures contracts traded globally in 2010.”\textsuperscript{6}

1.2 Statement of the Problem:

Derivatives have been around in the global market for a very long time. The Stock Exchanges in India have now been in existence for more than a century. Bombay Stock Exchange, commonly referred to as the BSE, is a stock exchange located in Mumbai, Maharashtra and was established in 1875. Subsequently, the National Stock Exchange was set up in the same city in
November 1992. “There were around 23 Equity Stock Exchanges operating in India in various States at the time of permitting the Equity Derivatives market in India.”7 As compared to traditional securities market in India, regulated Derivatives Market is fairly a recent development.

“The road for stock exchange traded derivatives contracts was cleared with removal of prohibition of options on securities by way of amendment to Securities Laws through Securities Laws (Amendment) Ordinance, 1995. A Bill was introduced on Oct 28, 1999 and was converted into an Act on December 16, 1999 making way for derivatives trading in India.”8

Securities and Exchange Board of India (SEBI) appointed various Committees to develop appropriate regulatory framework for derivatives trading in India. SEBI granted final approval for exchange traded derivatives trading in India in May 2000 and the derivatives trading commenced in India in June 2000. In June 2000, exchange-traded equity derivatives were introduced at the two national stock exchanges, National Stock Exchange (NSE) and Bombay Stock Exchange (BSE). This was followed by approval for trading in options based on these two indices and options on individual securities, index options, Stock Options, Stock Futures and Interest Rate Futures.

Many emerging and transition economies discarded their conventional ways of working with a view to bring in global practices for betterment of economy as well as investors. Information technology has virtually created a borderless world, where information, goods and services are flowing freely across borders within no time and with little cost. It is said that the securities markets in India have really progressed well after the introduction of derivatives in the Indian Market.

In India, till July 2012 there were two recognized Stock Exchanges for Derivatives Trading viz. Bombay Stock Exchange (BSE) and National Stock Exchange of India Ltd (NSE). However, there was always monopoly enjoyed by National Stock Exchange (NSE) which has almost more than 97.50% market share in derivatives segment. There was almost no trading in the derivatives segment of BSE from May 2005 till January 2006. Even post January 2006, till October 2006 the number of contracts traded was less than 7000 contracts and that too only in Index Futures. It looked like the market was
picking up for BSE derivatives segment since November 2006 when approximately 2.5 lakh contracts were traded. However, the trading on BSE slowly became weak over a period of time and fell below less than 5000 contracts by November 2008. Thus, it has always been NSE predominantly dominating the equity derivatives market space as exchange since derivatives trading was introduced in India in 2000.

Now the trading in BSE appears to have picked up since October 2011, only with the introduction of incentive program, Liquidity Enhancement Incentive Programmes (LEIPS), launched by the exchange for the trading members. Also, in July 2012 another national level exchange, MCX Stock Exchange (MCXSX) received recognition from SEBI for starting the equity derivatives operation in India thereby creating some competition in the derivatives exchange space.

The researcher had started the study keeping in mind the following problems-

i. Even though the growth has been robust in the derivatives market in India, there is still lot more needs to be done to increase the participation in the equity derivatives trading including the educating the investors at large.

ii. Minimum contract size adopted at the time of study was Rs. 2 lacs of value which was a major deterrent for small retail investors to participate at large in the equity derivatives trading. For a small investor who is habituated to deal in 50 to 100 shares, such a huge contract size cause a scare and also keeps them away from a product that could give them an instrument to hedge their risks or participate in the gains with minimum investments.

iii. Due to absence of delivery based settlement, many investors are not participating in the derivatives market. Also, this could bring one more type of product in the basket to be offered to the market at large in the equity derivatives market.

iv. The structure of spot market/cash market is important for the development of an efficient derivative market. Many securities listed on stock exchanges are not traded in the equity derivatives market. This may result in high concentration and volatility of the index as index itself comprised of those few highly traded scrips and would mainly be used for hedging the
positions taken in other stocks than those available in the equity derivatives market.

v. There is a need to increase the basket of products for trading so as to provide the variety of avenues for investments and/or trading in the equity derivatives market to the investors.

vi. There has been ambiguity in the Stamp duty to be paid on the contracts and hence many brokers are caught on the wrong side of the law where they would be required to bear the stamp duty from their own pockets at the later stage of the claim by the tax authority.

vii. The Indian investor, though familiar with forward trading under badla system, derivatives trading strategies are not yet familiar to him. There is a need felt for imparting the knowledge on the large scale to the investors about the same.

The derivatives market in India is as old as just over a decade. Further, on considering the above problems, it is felt necessary to make a detailed study about the equity derivatives market in India. Hence, the topic “Equity Derivatives Market in India, Emerging Trends and Prospects” has been selected for the purpose of the study.

1.3 Importance of the Study and Selection of the Subject:

Equity derivatives market has commenced in India since June 2000. Since then, there have been many developments in the derivatives market. There has also been good growth seen in the equity derivatives market. The volumes have grown multifold. The number of contracts traded on the exchanges has grown multifold. In any country, there are largely three stumbling blocks in development of the successful derivatives market mainly economic barrier, lack of infrastructure and regulatory barrier. India has successfully overcome these barriers and there have been many regulatory frameworks, operational, infrastructural and economic developments that could be applauded.

A number of research studies have been carried out to find out risks inherent in derivative operations but there is no agreement in results. There are various noteworthy risks identified such as Credit Risk, Market Risk, Liquidity
Risk, Operations Risk, Legal Risk, Systemic Risk and Settlement Risk found to be embedded in the derivatives operations. A brief description of these major risks has been given below:

**Credit Risk**: A counterparty default in a derivative contract is called as a credit risk. It may be further divided into pre-settlement risk and settlement risk. Credit risks can be managed through use of credit limits, use of collateral or through third party guarantees.

**Market Risk**: The market risk is the risk of all types of underlying products used for the derivatives like interest rate, foreign exchange, equities and commodities. It arises out of changes in the level or volatility of market prices. The market risk can be managed by fixing limits for intra-day, overnight and stop-loss in derivatives.

**Liquidity Risk**: In derivatives trading, liquidity risk may be in two forms. The first risk is lack of liquidity in specific products or markets, where the firm is unable to unwind or offset a contract at or near the previous market price. Second is the funding liquidity risk where the firm is unable to meet the payment obligation due to drying up of funds. Liquidity risk can be managed by proper funds planning.

**Operational Risk**: Operational risk is the risk that arises due to fraud, human error, system ineffectiveness or lack of proper control. This can be managed by setting proper control systems, checks etc.

**Legal Risk**: Legal risk is the risk arising due to improper documentation, or any other lacunae in the derivative contract. Legal risk can be eliminated by using the standard international documentation and legal advice whenever necessary. International Currency Options Master (ICOM) documents for options and International Swaps and Derivatives Master Agreements (ISDMA) for swaps and other types of derivatives are used to manage legal risk.

**Systemic Risk**: This risk is exhibited when there is a large and complex organization of financial positions in the economy. Systemic risk of derivatives can be defined as a widespread default in any set of financial contracts associated with default in derivatives. If derivative contracts are to cause widespread default in other markets, there first must be large defaults in derivative markets."Systemic risk" is said to arise when the failure of one big
player or of one clearing corporation somehow puts all other clearing corporations in the economy at risk. To put it simply, suppose that an index arbitrageur is long the index on one exchange and short the futures on another exchange. Such a position generates a mechanism for transmission of failure - the failure of one of the exchanges could possibly influence the other. Systemic risk also appears when very large positions are taken on the OTC derivatives market by any one player.

**Settlement Risk:** Settlement risk is the risk of default that occurs at a specific point in the life of the contract: the date of settlement. This term can also be said to be default risk, however, it just describes different occasions or causes of default.

The major concern in derivatives trading is some of the company’s experienced heavy losses and few of them even closed their businesses. The corporations that suffered losses by are reputed and run by intellectuals with strong educational background. For instance, Satyam Computers case is worth a mention because it was one of the major IT giant and was run by management graduate from Ohio University and was also awarded Golden Peacock Global Award for Excellence in Corporate Governance 2008. This company was traded in the derivatives market on large scale and the scam completely eroded the net-worth of the company.

Besides the above, even though the equity derivatives market in India is just over a decade old, there has not been any study carried out to critically examine its progress in India and also compare it with the global markets. Hence, it becomes important that the progress of the equity derivatives market in India is reviewed critically to analyze the problems faced and the new steps required to be taken to further improve the trading activity in the equity derivatives market in India. The researcher has selected this topic since the equity derivatives market is just over a decade old. There has not been critical analysis carried out of the growth of equity derivatives market in India. Further, there has not been study reflecting the major emerging trends such as rise of screen based trading, reducing brokerage rates, cross listing of global indices, emergence of mobile trading etc carried out. The researcher also felt that the derivatives market in India is plagued with certain issues such as high
transaction cost, increase in market manipulative activities, export of Indian derivatives markets offshore, ambiguity in stamp duties etc. which required further study.

1.4 Objectives of the Study:

The main objectives of the study are as follows:

i. To review growth and development of derivatives market in India.
ii. To evaluate the progress and working of the derivatives market in India.
iii. To make an appraisal of the role of SEBI as a regulatory body in connection with the derivatives market in India.
iv. To study the emerging trends in derivatives market in India.
v. To probe into the problems of derivatives market due to Government policies.
vi. To make an appraisal of the current equity derivatives market scenario in India with reference to other global equity derivatives market.
vii. To study the contract designs employed on the important equity derivatives products in India and suggest any changes that could better the contract designs.
viii. To study the growth of the underlying equity spot market compared to equity derivatives markets.
ix. To study the appropriate regulatory structure for derivatives markets. Further, to study how to address concerns about market manipulation and systemic fragility.
x. To study problems faced by investors, intermediaries in equity derivatives market.
xii. To encompass any collateral with or incidental aspects of the derivatives market in India.

1.5 Scope and Limitations of the Study:

The period covered under the study was mainly 2001-02 to 2011-12. This period was also considered for the purpose of comparison of Indian Equity Derivatives market with its global counterparts. Thus, taking into consideration the nature of study, the scope and limitations of the study are given below:
a) Scope of the Study:

The scope of the study has been broadly classified as geographical, operational and period-wise. These classifications have been explained below:

- Geographical:

  As the derivatives market has emerged as a very sophisticated market in India, so the efforts are made to study this issue at national level. Performance of derivatives market in India has been shown to prove the importance and status it has achieved in recent times in the current economy. It enables researcher to study the progress and working of derivatives market in India as compared to the underlying market and also other markets like interest rate derivatives, currency derivatives etc. A comparative derivatives markets study with other countries will throw some light on the progress made by us in such a short span of time since opening of the derivatives market in June 2000.

- Operational:

  Derivatives market in India has flourished only because of the confidence shown by the investors in the strong risk management system put in place by both SEBI as a regulator and the Stock Exchanges providing the platform for trading. Thus, a light is thrown on the developments that have taken place in India in the risk management system and the progress made in terms of trading, the varied products offered, clearing and settlements, and other regulatory operational aspects stipulated from time to time.

- Period-wise:

  Derivatives trading commenced in India in June 2000 after SEBI granted the final approval to this effect in May 2000. The period for the study considered was from 2001-2002 to 2011-2012 (eleven years) for carrying out comprehensive study. It will ultimately prove the sanctity of the decision taken of opening the market in India. It will also give an insight on the gradual development of the Indian derivatives market and the vulnerability of the derivatives market to other uncontrollable factors such as influx of FII funds, ups and downs of equity market,
obstacles due to government policies, obstacles due to SEBI regulations, impact of interest rates in other countries, impact of development in other economies etc.

b) Limitations of the Study:

The researcher also felt few limitations while carrying out the study. These limitations of the research faced by the researcher are as follows:

i. The derivatives market in India is a very vast subject of study. Further, derivatives market in India exists for equity, currency, interest rate, commodities etc. However, due to time constraint the study has been limited only to the equity derivatives. Also, study suffers from lack of large inputs due to time constraint considering the period under study was spread over a long period of eleven years.

ii. The derivatives study also has been to a large extent limited to the data available for equity derivatives trading on NSE and BSE in the public domain. Largely, the study is also limited to the practices followed by NSE since more than 99% of the market share in the equity trading has been captured only by NSE and hardly any trading is taking place on the Bombay Stock Exchange (BSE). Thus, the data and the analysis could be largely skewed towards NSE.

iii. There is no minimal data available with regard to forward contracts executed outside the Exchange platform prior to existence of regulatory body. Hence, the study with regard to development of derivatives market is carried out with reference to the trading on the stock exchange platform only.

iv. There are a large number of investors in the equity derivatives market whose count runs in several lacs. Also, it is difficult to estimate exact number of investors since the investors can register through multiple brokers and may have multiple client codes across various brokers. Further, these investors are based out of Pan India and hence it is impossible to reach out to such a large number of investors and also at the Pan India and the international level to have adequate sample size considering the investor base is so large in F&O segment and is spread
globally. Thus, the study and outcome is limited to the responses received from small number of derivatives investors.

v. The study is also limited since the analysis and data presentations are carried out on the basis of the responses and opinions received from the various categories of respondents involved in the derivatives market. The outcome is entirely subject to the answers provided by the sample chosen for the study.

1.6 Important Definitions and Concepts:

There are various definitions and concepts used in the thesis by the researcher. These important definitions and concepts have been explained here.

“The term “derivative” indicates that it has no independent value, i.e. its value is entirely “derived” from the value of the cash asset. A derivative contract or product, or simply “derivative”, is to be sharply distinguished from the underlying cash asset, i.e. the asset bought/sold in the cash market on normal delivery terms. A general definition of “derivative” may be suggested here as follows: “Derivative” means forward, future or option contract of predetermined fixed duration, linked for the purpose of contract fulfillment to the value of specified real or financial asset or to index of securities.”

Theoretically, derivatives are financial instruments whose values depend on the values of other, more basic underlying asset classes. They do not have value on their own & they derive their values from another asset or multiple of asset classes such as equity securities, fixed-income securities, foreign currencies, commodities, non-commodities and such other assets. For example, an Index Option is a derivative whose value is dependent on the price of its underlying i.e. Index value. Derivatives are useful in reallocating risk either across time or across individuals with different risk bearing preferences.

International Monetary Fund (IMF) has defined the Financial Derivatives as “financial instruments that are linked to a specific financial instrument or indicator or commodity, and through which specific financial risks can be traded in financial markets in their own right.”

Financial derivatives contracts are usually settled through net payments of cash. This often occurs before maturity for exchange traded contracts in case
of equity, currency or commodity futures. Cash settlement is a logical consequence of the use of financial derivatives to trade risk independently of ownership of an underlying item. However, some financial derivative contracts, particularly the ones involving foreign currency, are associated with transactions in the underlying item.

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

i. 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.

ii. A contract which derives its value from the prices, or index of prices, of underlying securities.

**Equity Derivatives:** Based on the underlying the derivatives can be classified in various markets. The underlying asset here is shares in a particular company, a basket of stocks, or a stock index such as Nifty. A stock index is simply a way of measuring the price of a particular basket of stocks.

**Forwards:** A forward contract is a customized contract between two entities, where settlement takes place on a specific date in the future at today’s pre-agreed price. This is an agreement between two parties to buy or sell an asset at a specified point of time in the future. In case of a forward contract the price which is paid or received by the parties is decided at the time of entering into the contract. Forwards are contracts customizable in terms of contract size, expiry date and price, as per the needs of the user.

Forward contracts are very popular on foreign exchanges. Most large banks engage in forward contracts in the developed nations. Forward contracts can be used to hedge foreign currency risk.

**Futures:** Like a forward contract, a futures contract is an agreement between the two parties to buy or sell an asset at a certain time in the future for a certain price. Unlike forward contracts, futures contract are normally traded on the exchanges. Futures contracts give the holder an opportunity to buy or sell the underlying at a pre-specified price sometime in the future. They come in standardized form with fixed expiry time, contract size and price.
In exchange parlance, a futures contract is a standardized agreement between two parties that a) commits one to sell and the other to buy a stipulated quantity and grade of a commodity, currency, security, index or other specified item at a set price on or before a given date in the future; b) requires the daily settlement of all gains and losses as long as the contract remains open; and c) for contracts remaining open until trading terminates, provides either for delivery or a final cash payment (cash settlement).

In the Indian market the following types of futures contracts are traded on the Exchanges:

a. Stock Futures
b. Stock Index Futures
c. Currency Futures
d. Interest Rate Futures
e. Commodity Futures

Options: An option on a future is the right, but not the obligation, to buy or sell a specified number of underlying futures contracts or a specified amount of a commodity, currency, index or financial instrument at an agreed upon price on or before a given future date. Options are a right available to the buyer of the same, to purchase or sell an asset, without any obligation. It means that the buyer of the option can exercise his option but is not bound to do so. Normally, Options on futures are traded on the same exchanges that trade the underlying futures contracts and are standardized with respect to the quantity of the underlying futures contracts (by custom, one futures contract), expiration date, and exercise or strike price (the price at which the underlying futures contract can be bought or sold).

Options are of two types: call options (calls) and put options (putts).

The Call Option gives the buyer the right, but not the obligation, to buy a given quantity of the underlying asset, at a given price, on or before a given future date. Example: - XYZ, on 1st April buys an option to buy 1 lot of ICICI Bank (250 shares of ICICI Bank) @ Rs1050 on or before 30th April. In this case, XYZ has the right to buy the shares on or before the specified date, but he is not bound to buy the shares.
The **Put Option** gives the buyer the right, but not the obligation, to sell a given quantity of the underlying asset, at a given price, on or before a given date. For example: - XYZ, on 1<sup>st</sup> April buys an option to sell 1 lot of ICICI Bank (250 shares of ICICI Bank) @ Rs1050 on or before 30<sup>th</sup> April. In this case, XYZ has the right to sell the shares on or before the specified date, but he is not bound to sell the shares.

In both types of options, the seller of the option has an obligation but not a right to buy or sell an asset. His buying or selling of an asset completely depends upon the action of buyer of the option.

In case of exchange traded options contract, the contracts are standardized and traded on the exchanges. The cost of obtaining the right for the buyer, to buy or sell options, is known as the option's "premium." This is the price that is bid and offered on the exchange trading systems.

Derivatives are primarily used by three categories of users: (a) Hedgers, (b) Speculators and (c) Arbitrageurs.

**Hedgers:** Risk is a part and parcel of every business. To protect against business risks, which are beyond control, derivatives are used. Derivatives are means of managing such risks. Parties wishing to transfer their risk component of their portfolio or manage their risks are called Hedgers. Hedgers use derivatives for protecting (risk-covering) against adverse movement. Hedging is a mechanism to reduce price risk inherent in open positions. Derivatives are widely used for hedging. Hedging can help lock in existing profits. Its purpose is to reduce the volatility of a portfolio, by reducing the risk.

**Speculators:** These are the parties who intentionally take the risk from hedgers in pursuit of profit and are called Speculators. They trade in derivatives contracts to bet on the future movement of the price of the underlying. They help the markets in providing further liquidity. Speculators make use of derivatives to make quick fortune by anticipating/forecasting future market movements. Hedgers wish to eliminate or reduce the price risk to which they are already exposed. Speculators, on the other hand are those class of investors who willingly take price risks to profit from price changes in the underlying. While the need to provide hedging avenues by means of derivative instruments is laudable, it calls for the existence of speculative traders to play the role of...
counter-party to the hedgers. It is for this reason that the role of speculators gains prominence in a derivatives market.

**Arbitrageurs**: Participants who operate simultaneously in different markets, in pursuit of profit and to eliminate mis-pricing are called Arbitrageurs. These people perform a very valuable economic function by keeping the derivative price and current underlying assets prices closely consistent. Arbitrageurs use derivatives to earn risk-free profits by exploiting market imperfections. Arbitrageurs profit from the price differential existing in two markets by simultaneously operating in the two different markets.

**Novation**: Some Clearing Houses interpose between buyers and sellers as a legal counter party i.e. the clearing house becomes a buyer to every seller and vice versa. This obviates the need for ascertaining credit-worthiness of each counter party and the only credit risk that the participants face is the risk of clearing house committing a default. Clearing House puts in place a sound risk-management system to be able to discharge its role as a counter party to all participants.

### 1.7 Hypotheses of the Study:

The various hypotheses used in the study are as follows:

i. Equity derivatives market in India has grown by leaps and bounds and will continue to grow. The progress of the derivatives market in India has been quite satisfactory and it grew at a very fast pace.

ii. After the market crash in 2008, there is a slow and steady shift in preference of the investors to Stock Index Options from other products that were preferred earlier.

iii. There are a large number of investors who do not invest in the equity derivatives market due to lack of knowledge of derivatives.

iv. The investors are more concerned about the price risk than the other risks associated with the equity derivatives products such as legal risk, systemic risk, market risk, liquidity risk, default risks etc.
1.8 Research Methodology:

The data for the study of derivatives market in India has been collected from both, the primary source and the secondary source. In the first stage the data was collected from published work of National Stock Exchange (NSE), Bombay Stock Exchange (BSE) and Securities and Exchange Board of India (SEBI) and other data available in the libraries, books and journals, and on the internet. In the second stage, the primary data was collected by way of designing questionnaires for investors and intermediaries, informal discussions and interviews etc.

1.8.1 Primary Data:

Information was collected through the discussion, interviews with the derivatives market intermediaries such as Trading Members, Clearing Members, Employees of Stock Exchanges and other categories of Investors and through the questionnaire filled in by the investors and intermediaries.

a) Unstructured Interviews and Informal Discussions:

Verbatim information was collected through interviews and discussions with the investors, officials of the exchanges and regulatory body, experts and other intermediaries involved in the derivatives market which provided deeper insights on the ground reality, current trends in the market and the actual problems faced by these individuals/entities. The unstructured interviews and informal discussions were also held with 20 officials of the exchanges and regulatory body, 25 experts, investors and other intermediaries.

b) Questionnaire:

Two types of structured questionnaires were prepared by the researcher to gather the primary data, one for the investors and the other for the members /stock brokers. The primary information from the investors was collected through the questionnaire which was circulated by the online mode, through the interviews and meetings. It was circulated to the individuals at large. The questionnaire could reach large number of investors online and they answered to all the
questions patiently. The questionnaire was designed to understand personal profile of the investor such as age, gender, place of residence, education, experience in derivatives market, category of investor, income range, occupation details etc. The questionnaire further focused on seeking equity derivatives market related information like derivatives training undertaken, the need for the same, where does investor invest, preference of equity derivative product for investment and periodicity of contracts, purpose of trading and any strategies adopted for the same, opinion on contract size, the kind of risk of concern, the opinion of investors on growth of equity derivatives market in India, margins levied, need for wide basket of products etc. The primary data was collected from 6617 investors through the questionnaire.

The primary information was also sought from the brokers in the equity derivatives market though the interviews, meetings and online mode. Largely the data was gathered through circulation of questionnaire to the nationwide network of the brokers. The questionnaire was designed to understand the type of broking entity and which exchanges it is registered on, types of clients they deal with and through which mode etc. The questionnaire further focused on seeking opinion on need of certified dealers operating the terminals, allowing only certified retail investors to traded in derivatives, allowing options to clients and their profiling, preference of equity derivative product for investment and periodicity of contracts preferred by clients, purpose of trading and any strategies adopted for the same by clients, opinion on contract size, risks of concern, margining system for brokers and margins levied, effective utilization of capital deployed, risk management system, need to increase the stocks in the equity derivatives market, need for wide basket of products, need to reduce the transaction cost, need to change in the regulation style, need for OTC derivatives market in India like global markets etc. The primary data was also collected from 80 stock brokers through questionnaire.
c) **Selection of Sample**

**Universe:**

There were **903 and 1329** equity derivatives brokers registered as of December 2011 for trading in Equity Derivatives segment of BSE and NSE respectively.

There are a large number of investors in the equity derivatives market and it is difficult to estimate exact number of investors since the investors can register through multiple brokers and may have multiple client codes across various brokers. Further, the investors may be registered with multiple exchanges. Thus, the data with regard to exact number of investors in equity derivatives based out of Pan India is not available anywhere. The number of investors in equity derivatives may run in few lacs.

**Sample Selected:**

Most of the brokers have obtained the registration on both the Exchanges in the equity derivatives segment. There has been no/negligible trading taking place on the derivatives segment of BSE during the period of the research work. BSE had negligible market share in the equity derivatives market compared to NSE’s market share. Thus, thrust has been more on the interviewing NSE members than the BSE members. As an intensive study of derivatives market in India, for the purpose of study the questionnaire was sought from all the members keeping in mind to cover at least 5% brokers, i.e. 66 brokers of NSE and 45 brokers of BSE as sample respondents, with a view to project working of the derivatives market in India, understand trends observed and the problems faced by them. However, since responses to the questionnaire could be collected from **80 brokers of NSE and 65 brokers of BSE, all these responses to the questionnaire were taken as a sample.** These respondents’ practical exposure has helped in demonstrating the investment strategies used by the investors, the problems and prospects of derivatives market in India.
Further, large number of investors across various cities trade in the equity derivatives markets in India. For the purpose of study, the questionnaire was made available to as many investors as possible for participating across India. The questionnaire was circulated using the latest technological advancement through extensive use of facebook, LinkedIn, various categories of Google groups and e-mails etc to the investor base at large. The sample of respondents was selected by adopting random sampling technique. The primary data could be collected from 6617 investors through questionnaire spread across India which contained the questions useful for collecting the information regarding their personal profile, the investment strategies adopted, opinions on the contract size specifications and general market news, need for derivatives training to investors, various strategies adopted while trading in the equity derivatives markets in India.

1.8.2 Secondary Data:

The secondary data was collected from various libraries where the records are stored, visits to various government organizations, the exchanges and intermediaries, from international and national websites, from published data sources such as various reports, periodicals, journals, books, magazines, research articles, newspapers, annual reports, published research papers etc.

For the sake of evaluation of performance of derivatives market in India, the data available in the SEBI’s Annual Reports, RBI Bulletins, Stock Exchange Annual Reports, Stock Exchange, SEBI and World Federation of Exchange’s Websites etc was used extensively.

For the purpose of collecting data, the websites, data centers and data available in the public domain of the following entities was extensively used:

1. Securities and Exchange Board of India (SEBI)
2. National Stock Exchange of India Ltd (NSE)
3. Bombay Stock Exchange Ltd (BSE)
4. World Federation of Exchanges (WFE)
Taking into consideration the nature of study, emphasis was given on the secondary data. However, whenever and wherever possible and necessary, the researcher has used the primary data for the purpose of study.

1.9 Review of Literature:

The researcher went through various literatures available on this subject. Numerous books, reports, news articles, research articles and studies were thoroughly studied. Context to some of the books, articles read and various websites visited is given below:

**Options, Futures, and Other Derivatives, Seventh Edition Authored by John C Hull published by Tata McGraw Hill in the year 2009.** The author covers several aspects of several derivatives markets. The author throws light on the mechanics of futures markets, hedging strategies using futures, interest rates, determination of forward and futures prices, swaps, mechanics of options markets, properties of stock options, trading strategies involving options, derivatives markets in developing countries, options on stock indices and currencies, futures options, value at Risk, credit risk, credit derivatives, exotic options, whether, energy and insurance derivatives, interest rate derivatives. The author has thrown some light on the derivatives markets in developing countries, particularly in China, India and Brazil. The author also touches on the options on indices, how index options can be used and the valuation issues. He covers in more details how Black’s model is used as an alternative to Black-Scholes for valuing a wide range of European options and also the Greek letters such as Delta, gamma, theta, vega etc. The author covers aspects like variance swaps, volatility swaps, and their valuations. Further, he covers transaction involving credit indices, how the probability distribution for an asset price at a future time can be calculated from implied volatilities, lookback options, futures style options etc.

**Financial Risk Management, 1st Edition authored by Dun & Bradstreet and published by Tata McGraw Hill in the year 2010.** This book deals with risk management in businesses, particularly in banks and financial institutions. It discusses the concepts of risk, its various sources and the need
for risk management. Various types of risks like credit risk, market risk, operational risk, etc. are treated in detail. The book also raises awareness on the regulatory framework, best practices, legal issues, accountings issues, and tax issues relevant to risk management.

**Futures Markets: Theory and Practice, 1st Edition Authored by Sunil Parameswaran and published by Tata McGraw Hill in the year 2005.** Future Markets: Theory and Practice is written by the author on Futures, Options and Swaps, and covers forward and futures contracts. It begins with an introduction to derivative markets, comparing and contrasting forward contracts, futures contracts and options contracts. The book looks at the salient features of the operation of futures markets, and the design of futures contracts. It also covers the pricing of forward and futures contracts in detail and hedging and risk management in particular. It covers various asset markets, short-term interest rate contracts, long-term interest rate contracts, and foreign exchange and stock index futures contracts. The book highlights the mechanics of the underlying spot markets and the prevailing conventions have been covered in detail, and the related mathematical expressions derived from first principles.

**Futures and Forwards, 1st Edition Authored by Sunil K Parameswaran and published by Tata McGraw Hill in the year 2010.** The book provides a reasonably in-depth exposition on the topics in a concise and lucid manner, embellished with a lot of pertinent examples. It offers Just in Time learning on securities markets, with a focus on global conventions and practices. Futures and forwards cover the fundamentals of futures and forward contracts. The book covers the similarities and differences between futures and forwards, valuation of forward and futures contracts, Hedging and speculation and trading strategies.

**The Crash of 2008 and What It Means, Revised Edition, Authored by George Soros and published by Public Affairs in the year 2009.** In the midst of the most serious financial upheaval since the Great Depression, legendary financier George Soros explores the origins of the crisis and its implications for the future. Soros, whose breadth of experience in financial markets is unrivaled, places the current crisis in the context of decades of study of how individuals and institutions handle the boom and bust cycles that now
dominate global economic activity. The author has said that this is the worst financial crisis since the 1930s, in characterizing the scale of financial distress spreading across Wall Street and other financial centers around the world. In a concise essay that combines practical insight with philosophical depth, Soros makes an invaluable contribution to our understanding of the great credit crisis and its implications for our nation and the world.

Stock Exchanges, Investments and Derivatives, 3rd Edition, authored by V Raghunathan and published by Tata McGraw Hill in the year 2010. The primarily this book imparts a basic understanding of the manner in which stock exchanges function, especially in India. In addition it seeks to present simple and easy explanations of import theoretical aspects of stock market operations, investments and derivatives. It also helps with familiarity with basic arithmetic to construct and evaluate his or her portfolio of investment.

Financial Derivatives, 2nd edition, Authored by S.S.S. Kumar and published by Ashoke K Ghosh, PHI Learning Private Limited in the year 2008. This compact book explains the subject without the mathematical complexities one comes across in many other books. The book deals with derivatives and their pricing, keeping the Indian regulatory and trading environment as the backdrop. The products are explained in detail with illustrative examples so as to make it easier for comprehension. The book first introduces to the derivatives market and the quantitative foundations. Then it goes on to give a detailed description of the Forward Agreements, Interest Rate Futures, and Stock Index Futures and Swaps. The book also focuses on Options—Option Pricing, Option Hedging and Option Trading Strategies. It concludes with a discussion on OTC derivatives. The book gives an introduction to the derivatives market, the quantitative foundations, fundamentals of financial futures, forward rate agreements, interest rate futures, stock index futures, swaps, options basics, options pricing, options hedging strategies, options trading strategies, foreign exchanges derivatives, over the counter products, case studies on derivatives misfortunes etc.

broader view, encompassing both risk hedging at one end of the spectrum and strategic risk taking on the other. The book helps in separating good risk (opportunities) from bad risk (threats), showing how to take advantage of the former while protecting against the latter. The book introduces powerful financial tools for evaluating risk, and shows how to draw on other disciplines to make these tools even more effective. The book redefines the risk in business as potentially powerful strategically to help increase profits. It also helps in getting out of the defensive crouch, to learn which risks to avoid, which to mitigate, and which to actively exploit. The book explains risk, why we care about risk, what we think about risk and how do we measure risk. The book also throws light on risk adjusted Value, probabilistic approaches: Scenario Analysis, Decision, Value at Risk (VaR), Real Options, the big picture of Risk Management, profiling and hedging of risk management, Strategic Risk Management and the first principles of Risk Management.

**Dr. L.C. Gupta Committee Report, submitted to SEBI in March 1998.** SEBI appointed a committee in November, 1996 to develop appropriate regulatory framework for derivatives trading in India. The report covers various aspects involved in the regulatory framework including the set of the derivatives market, role of stock exchanges, required membership norms, risk management framework, need for regulatory oversight, composition of various committees at stock exchanges, need for Settlement Guarantee fund, certification requirement for sales staff and dealers, need for separate division in SEBI, suggestive Bye-Laws to be adopted by the derivatives segment of the stock exchanges etc. SEBI accepted most of the recommendations of the committee.

**Prof. J R Varma Committee Report, submitted to SEBI in October 1998.** The Committee was appointed by SEBI to recommend measures for risk containment in derivatives market in India. The committee enumerated the risk containment issues that assume importance in the Indian context such as estimation of volatility, calendar spreads, trader net-worth, margin collection and enforcement, Clearing Corporation, position limits, legal issues etc. These recommendations were adopted by SEBI to govern the risk management framework for derivatives market in India.
Besides the above, there were various websites visited where there was large amount of data available pertaining to the derivatives markets, facts and figures and also the way the derivatives market works and the developments so far in the equity derivatives market. For the purpose, the researcher visited the Securities and Exchange Board of India (SEBI) website, reviewed the rules and regulations published, various circulars and guidelines issued in this regards and also the statistical data available about the equity derivatives market. The researcher also studied various annual reports released by SEBI since 2000-01 till 2011-12 to understand the developments that are being carried out by the regulatory body with regard to the equity derivatives market. Besides, the SEBI website, the researcher also visited the National Stock Exchange website and the Bombay stock Exchange websites to understand the working of the equity derivatives market, the contribution made by these exchanges so far in the derivatives markets, the landmark activities that has taken on the exchanges with regard to the equity derivatives market. The researcher also studies various statistics available on the exchange websites, the various participants available in the market, the products offered to the investors in the equity derivatives market and their annual reports to understand the growth and milestones they have achieved in this field.

All the books, research articles and reports read by the researcher were found to be dealing more with the concept of derivatives, usage of derivatives as an instrument, the benefits of derivatives and largely with the analysis of various risks involved in the derivatives market. There were also few articles written on this subject but none of the above covered the study of equity derivatives market in detail nor did they cover the aspects such as trends and prospects of the equity derivatives market in India. Thus, there was no comprehensive study carried out about the equity derivatives market in India covering on this research subject. Hence, the researcher has chosen this subject for the research study.

1.10 Statistical Tools:

The data from the primary and secondary sources was tabulated and classified in order to fit the scope of the study and in accordance with the requirements of the research study. In order to analyze and interpret the data,
researcher has used simple mathematical & statistical quantitative techniques like percentage, average, proportion, ratios and growth rate in order to make the primary data easily understandable and amenable. Further, various charts and tables such as trend analysis charts, growth rates, tables and other statistical tools were used in order to draw meaningful conclusions.

1.11 Chapter Scheme:

The thesis has been divided into eight chapters as follows -

**Chapter 1 - Introduction and Research Methodology:** This chapter covers the aspects such as introduction to the equity derivatives market, the need for study, the importance and selection of the subject, the statement of the problem, the objectives of the study, scope and limitations of the study, hypothesis of the study, the research methodology used for study including primary data collection, unstructured interviews, informal discussions, questionnaire, secondary data, selection of sample, review of literature, statistical tools used and the chapter scheme of the thesis.

**Chapter 2 - Historical Perspective of Derivatives Market in India:** This chapter covers the evolution of derivatives market globally and the evolution of equity derivatives market in India. The chapter also brings out a chronology of the important events that have been experienced during the progress of equity derivatives market in India. The chapter also carries out a comparison of equity derivatives market with the other asset classes and also amongst various products offered in the equity derivatives market.

**Chapter 3 - Evolution and Progress of Regulatory Framework for Derivatives Market in India:** This chapter consists of the regulatory framework adopted in the equity derivatives market in India. The chapter discusses in detail the evolution of the regulatory framework from setting up of the committee under Dr. L.C. Gupta to frame the appropriate regulatory framework to the current regulatory framework applicable to the equity derivatives market including requirements of the derivatives exchange, clearing corporation, governance of derivatives exchanges and committees, risk management framework suggested by committee under Prof. J. R. Varma, margining system and positions limits etc.
Chapter 4 - Functioning of Derivatives Market in India: This chapter covers the areas such as various products offered by the exchanges, market participants for trading, clearing and settlement mechanism, equity derivatives market structure including mode of trading, order matching logic and rules, order attributes, trade management, market timings, transaction charges details, KYC requirement etc.

Chapter 5 - Comparative Study of Indian Equity Derivatives Markets with Global Markets - Emerging Trends: In this chapter the global derivatives market is divided in three time zones viz. Americas, Asia Pacific and EAME (Europe, Africa and Middle East) and a comparison is made for these three time zones. Further, a detailed analysis is carried out of the Indian Derivatives market with the global counterparts to analyze the progress of India with the other global counterparts and the emerging trend in the global scenario.

Chapter 6 - Emerging Trends in Derivatives Market in India: There are various emerging trends observed over the last decade such as rise of screen based trading, reducing brokerage rates, emergence of mobile trading, increased use of technology for trading etc. An attempt is made to analyse these trends and its effect on the equity derivatives market in India. Besides the above, this chapter also covers the problems faced by the equity derivatives market in India.

Chapter 7 - Data Analysis: The questionnaire was collected from the intermediaries and the investors for the purpose of research work. The analysis of the questionnaire has been presented in this chapter. A detailed analysis has been made in the chapter illustrating through tables, pie and column diagrams. This chapter also highlights the recommendations that have been made by some of the participants.

Chapter 8 - Summary of Conclusions and Suggestions: In this chapter, the findings and conclusions of the thesis are brought out. Further, the recommendations have been made based on interviews and informal discussions with the employees of exchanges and regulatory body, intermediaries and the investors with a view to improve the working of the equity derivatives market in India and also to improve the participation of the investors in India which can further provide liquidity and depth to the equity derivatives market in India.
• **References:**

2. NCFM (2006), Derivatives Core Module Workbook, NSE, Mumbai, PP9-10
3. Ibid, PP10-25
4. Ibid, PP12-14
5. Ibid, PP12-14
8. NCFM (2006), Derivatives Core Module Workbook, Opit, P13