

Development of Financial Derivatives Market in India and its Position in Global Financial Crisis

Dr. Shree Bhagwat¹, Ritesh Omre², Deepak Chand³

Abstract- The past decade has witnessed the multiple growths in the volume of international trade and business due to the wave of globalization and liberalization all over the world. As a result, the demand for the international money and financial instruments increased significantly at the global level. In this respect, change in exchange rates, interest rates and stock prices of different financial markets have increased the financial risk to the corporate world. Adverse changes have even threatened the very survival of business world. It is, therefore, to manage such risk, the new financial instruments have been developed in the financial markets, which are also popularly known as financial derivatives. The basic purpose of these instruments is to provide commitments to prices for future dates for giving protection against adverse movements in future prices, in order to reduce the extent of financial risks. Today, the financial derivatives have become increasingly popular and most commonly used in the world of finance. This has grown with so phenomenal speed all over the world that now it is called as the derivatives revolution. In India, the emergence and growth of derivatives market is relatively a recent phenomenon. Since its inception in June 2000, derivatives market has exhibited exponential growth both in terms of volume and number of contract traded. The market turnover has grown from Rs.2365 Cr. in 2000-2001 to Rs.16807782.22 Cr. in 2012-13. Within a short span of twelve years, derivatives trading in India has surpassed cash segment in terms of turnover and number of traded contracts. The passed study encompasses in its scope, history, concept, definition, types, features, regulation, market, trend, growth, Future prospects and challenges of derivatives in India and status of Indian derivatives market vis-à-vis global derivative market. This paper tries to analyse the impact of global financial crisis on the financial derivatives market in India. It is found that the global financial crisis of 2008 has structurally altered the composition of equity derivatives market in India. The predominance of single stock futures as a derivative product has now been replaced by the predominance of index option as a favorite derivative product in India. The speculative nature of single stock futures had been the prime reason for the dominance of this derivative product in the pre-crisis period. However, the cautious risk-aversion on the part of the investor has now been the reason for the dominance of index options in the revised scenario. Such over domination of particular derivative products is not a healthy sign for the derivatives market in India.

Index terms/Keywords : Derivatives, Exchange rate, Financial crisis, Forward, Futures, Index options, Notional value, Options, Risk management, Swaps, Single Stock Futures, underlying asset.

JEL classification codes: G01, G1

INTRODUCTION

It is widely believed in financial world that the most significant milestone in financial innovation is achieved with the issuance and trading of derivatives. Along with this positive element, the proponents of derivatives also admit that this term arouses more controversies and most people look at them with suspicion and few would believe that they do contribute to the society's welfare. But the matter of fact is that derivatives are a standard risk management tool that enables risk-sharing and facilitates the efficient allocation of capital to productive investment activities. In this study, we will try and examine the veracity of a few misconceptions that surround derivatives along with their economic benefits. The present study attempts to discuss the genesis of derivatives trading by tracing its historical development, types, regulation and policy developments, trend & growth, future prospects and challenges of derivative market in India. The recent global financial crisis of 2008 has been unique in many aspects of its implications for the world financial order. It resulted into collapse of some of the biggest and oldest financial institutions of the world. It made imperative to rewrite the codes of financial exchanges in the world or at least code of ethics and behavior expected from the big daddies of the financial world. This crisis has incited new perspectives

among the theoreticians as well as practitioners of financial theories. This crisis has resulted into structural changes in the way people think and behave with respect to the risk borne by them, particularly the systematic risk. This article tries to present these structural changes observed in Indian stock markets with the advent of global financial crisis.

The study is organized into five sections. Section - I deals with the concept, features, definition, types and classification of derivatives. Section - II has been devoted to a discussion of evolution and growth of derivatives market, and regulation and policy development. Section - III discusses the statistical information (data). Section - IV discusses the status of Indian derivative market vis-a-vis global derivative market, Section - V discusses the global financial crisis in 2008 and the last Section - VI specifies summary and concluding remarks.

Section-I

1-CONCEPT OF FINANCIAL DERIVATIVES

At present the Indian stock markets are not having any risk hedged instruments that would allow the investors to manage and minimize the risk. In industrialized countries apart from money market and capital market securities, a variety of other securities known as 'derivatives' have now become available for investment and trading. The derivatives originate in mathematics and refer to a variable which has been derived from another variable. A derivative is a financial product which has been derived from another financial product or commodity. The derivatives do not have independent existence without underlying product and market. Derivatives are contracts which are written between

1. Asst. Professor, Faculty of Management Studies, Dr. H.S. Gour Central University, Sagar (M.P.) India.
E-mail : sbshreebhagwat@gmail.com
2. Student, Department of Business Management, BTIRT, Affiliated with Dr. H.S. Gour Central University, Sagar (M.P.) India.
E-mail : riteshomre@gmail.com
3. Student, Department of Business Management, BTIRT, Affiliated with Dr. H.S. Gour Central University, Sagar (M.P.) India.
E-mail : deepakc41@gmail.com

two parties for a easily marketable assets. Derivatives are also known as deferred delivery or deferred payment instruments. Since financial derivatives can be created by means of a mutual agreement, the types of derivative products are limited only by imagination and so there is no definitive list of derivative products.

1.1 Definition of financial derivatives :

A derivative is a financial product which has been derived from another financial product or commodity.

D.G. Gardener defined the derivatives as "A derivative is a financial product which has been derived from market for another product."

The securities contracts (Regulation) Act 1956 defines "derivative" as under section 2(ac).As per this "Derivative" includes

- (a) "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."
- (b) "a contract which derived its value from the price, or index of prices at underlying securities."

The above definition conveys that the derivatives are financial products. Derivative is derived from another financial instrument/contract called the underlying. A derivative derives its value from underlying assets.

Accounting standard SFAS133 defines a derivative as "a derivative instrument is a financial derivative or other contract will all three of the following characteristics:

- (i) It has (1) one or more underlying, and (2) one or more notional amount or payments provisions or both. Those terms determine the amount of the settlement or settlements.
- (ii) It requires no initial net investment or an initial net investment that is smaller than would be required for other types of contract that would be expected to have a similar response to changes in market factors.
- (iii) Its terms require or permit net settlement. It can be readily settled net by a means outside the contract or it provides for delivery of an asset that puts the recipients in a position not substantially different from net settlement.

From the aforementioned, derivatives refer to securities or to contracts that derive from another whose value depends on another contract or assets. As such the financial derivatives are financial instrument whose prices or values are derived from the prices of other underlying financial instruments or financial assets. The underlying instruments may be an equity share, stock, bond, debenture, treasury bill, foreign currency or even another derivative asset.

Hence, financial derivatives are financial instruments whose prices are derived from the prices of other financial instruments.

1.2 Underlying asset in a derivatives contract

As defined above, its value is entirely derived from the value of the underlying asset. The underlying asset can be securities, commodities, bullion, currency, livestock or anything else. In other way the underlying asset may assume many forms:

- (i) Commodities including grain, coffee beans, orange juice;
- (ii) Precious metals like gold & silver;
- (iii) Foreign exchange rates or currencies;
- (iv) Bonds of different types, including medium to long term negotiable debt, securities issued by governments, companies etc;
- (v) Shares and share warrants of companies traded on recognized stock exchanges and stock index;
- (vi) Short term securities such as T-bills;
- (vii) Over the counter (OTC) money market products such as loans or deposits.

1.3 The major players of Derivatives Market.

There are three major players in the financial derivatives trading:

1. **Hedgers:** Hedgers are traders who use derivatives to reduce the risk that they face from potential movements in a market variable and they want to avoid exposure to adverse movements in the price of an asset. Majority of the participants in derivatives market belongs to this category.
2. **Speculators:** Speculators are traders who buy/sell the assets only to sell/buy them back profitably at a later point in time. They want to assume risk. They use derivatives to bet on the future direction of the price of an asset and take a position in order to make a quick profit. They can increase both the potential gains and potential losses by usage of derivatives in a speculative venture.
3. **Arbitrageurs:** Arbitrageurs are traders who simultaneously buy and sell the same (or different, but related) assets in an effort to profit from unrealistic price differentials. They attempts to make profits by locking in a riskless trading by simultaneously entering into transaction in two or more markets. They try to earn riskless profit from discrepancies between futures and spot prices and among different futures prices.

1.4 Uses of financial derivatives

Derivatives are supposed to provide some services and these services are used by investors. Some of the uses and applications of financial derivatives can be enumerated as following:

1. **Management of risk :** One of the most important services provided by the derivatives is to control, avoid, shift and manage efficiently different types of risk through various strategies like hedging, arbitraging, spreading etc. Derivative assist the holders to shift or modify suitable the risk characteristics of the portfolios. These are specifically useful in highly volatile financial conditions like erratic trading, highly flexible interest rates, volatile exchange rates and monetary chaos.
2. **Measurement of Market:** Derivatives serve as the barometers of the future trends in price which result in the discovery of new prices both on the spot and future markets. They help in disseminating different information regarding the future markets trading of various commodities and securities to the society which enable to discover or form suitable or correct or true equilibrium

price in the markets. As a result, they assets in appropriate and superior allocation of resources in the society.

3. **Efficiency in trading:** Financial derivatives allow for free trading of risk components and that leads to improving market efficiency. Traders can use a position in one or more financial derivatives as a substitute for a position in underlying instruments. In many instances, traders find financial derivatives to be a more attractive instrument than the underlying security. This is mainly because of the greater amount of liquidity in the market offered by derivatives as well as the lower transaction costs associated with trading a financial derivative as compared to the costs of trading the underlying instruments in cash market.
4. **Speculation and arbitrage :** Derivatives can be used to acquire risk, rather than to hedge against risk. Thus, some individuals and institutions will enter into a derivative contract to speculate on the value of the underlying asset, betting that the party seeking insurance will be wrong about the future value of the underlying asset. Speculators look to buy an asset in the future at a low price according to a derivative contract when the future market price is high, or to sell an asset in the future at a high price according to derivative contract when the future market price is low. Individual and institutions may also look for arbitrage opportunities, as when the current buying price of an asset falls below the price specified in a futures contract to sell the asset.
5. **Price discovery :** The important application of financial derivatives is the price discovery which means revealing information about future cash market prices through the future market. Derivative markets provide a mechanism by which diverse and scattered opinions of future are collected into one readily discernible number which provides a consensus of knowledgeable thinking.
6. **Hedging :** Hedge or mitigate risk in the underlying, by entering into a derivative contract whose value moves in the opposite direction to their underlying position and cancels part or all of it out. Hedging also occurs when an individual or institution buys an asset and sells it using a future contract. They have access to the asset for a specified amount of time, and can then sell it in the future at a specified price according to the futures contract of course, this allows them the benefit of holding the asset.
7. **Price stabilization function :** Derivative market helps to keep a stabilizing influences on spot prices by reducing the short term fluctuations. In other words, derivatives reduces both peak and depths and lends to price stabilization effect in the cash market for underlying asset.
8. **Gearing of value :** Special care and attention about financial derivatives provide leverage (or gearing), such that a small movement in the underlying value can cause a large difference in the value of the derivative.

9. **Develop the complete markets :** It is observed that derivative trading develop the market towards "complete markets" complete market concept refers to that situation where no particular investors be better of than others, or patterns of returns of all additional securities are spanned by the already existing securities in it, or there is no further scope of additional security.
10. **Encourage competition :** The derivatives trading encourage the competitive trading in the market, different risk taking preference at market operators like speculators, hedgers, traders, arbitrageurs etc. resulting in increase in trading volume in the country. They also attract young investors, professionals and other experts who will act as catalysts to the growth of financial market.
11. **Liquidity and reduce transaction cost :** 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 cost in the markets of underlying assets.
12. **Other uses :** The other uses of derivatives are observed from the derivatives trading in the market that the derivatives have smoothen out price fluctuations, squeeze the price spread, integrate price structure at different points of time and remove gluts and shortage in the markets. The derivatives also assist the investors, traders and managers of large pools of funds to device such strategies so that they may make proper asset allocation increase their yields and achieve other investment goals.

1.5 Types and classification of derivatives

There are many ways in which the derivatives can be categorized based on the markets where they trade, based on the underlying asset and based on the product feather etc. some ways of classification are following:

- (1) **On the basis of linear and non-linear :** On the basis of this classification the financial derivatives can be classified into two big class namely linear and non-linear derivatives:
 - (a) **Linear derivatives:** Those derivatives whose values depend linearly on the underlying's value are called linear derivatives. They are following:
 - (i) Forwards
 - (ii) Futures
 - (iii) Swaps
 - (b) **Non-linear derivatives :** Those derivatives whose value is a non-linear function of the underlying are called non-linear derivatives. They are following:
 - (i) Options
 - (ii) Convertibles
 - (iii) Equity linked bonds
 - (iv) Reinsurances
- (2) **On the basis of financial and non-financial:** On the basis of this classification the derivatives can be classified into two category namely financial derivatives and non-financial derivatives.

(a) **Financial derivatives:** Those derivatives which are of financial nature are called financial derivatives. They are following:

- (i) Forwards
- (ii) Futures
- (iii) Options
- (iv) Swaps

The above financial derivatives may be credit derivatives, forex, currency fixed-income, interest, insider trading and exchange traded.

(b) **Non-financial derivatives:** Those derivatives which are not of financial nature are called non-financial derivatives. They are following:

- (i) Commodities
- (ii) Metals
- (iii) Weather
- (iv) Others

(3) **On the basis of market where they trade :** On the basis of this classification, the derivatives can be classified into three categories namely; OTC traded derivatives, exchange-traded derivative and common derivative.

(a) **Over-the-counter (OTC) traded derivative :** These derivative contracts are traded (and privately negotiated) directly between two parties, without going through an exchange or other intermediary. The OTC derivative market is the largest market for derivatives and largely unregulated with respect to disclosure of information between parties. They are following:

- (i) Swaps
- (ii) Forward rate agreements
- (iii) Exotic options
- (iv) Other exotic derivative

(b) **Exchange traded derivative:** Those derivatives instrument that are traded via specialized derivatives exchange of other exchange. A derivatives exchange is a market where individual trade standardized contracts that have been defined by the exchange. A derivative exchange act as an intermediary to all related transactions and takes initial margin from both sides of the trade to act as a guarantee. They may be followings:

- (i) Futures
- (ii) Options
- (iii) Interest rate
- (iv) Index product
- (v) Convertible
- (vi) Warrants
- (vii) Others

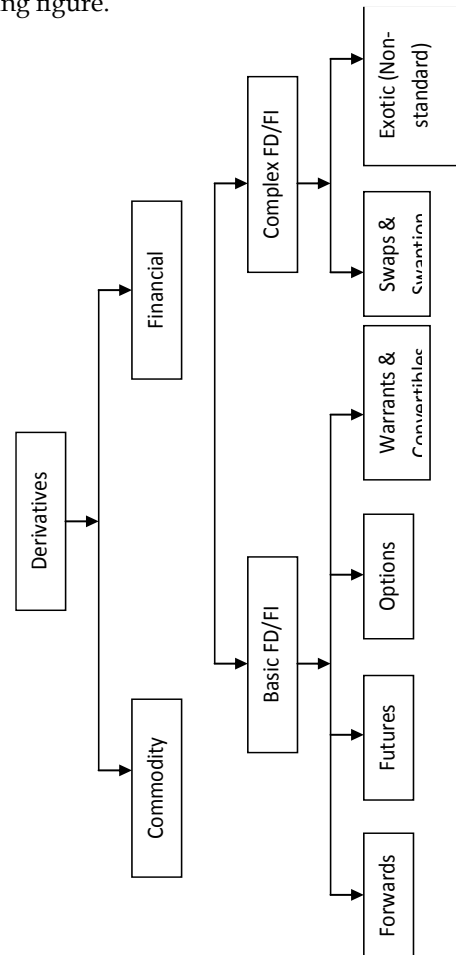
(c) **Common derivative :** These derivatives are common in nature/trading and classification. They are following:

- (i) Forwards
- (ii) Futures
- (iii) Options
- (iv) Binary options
- (v) Warrant
- (vi) Swaps

The various types of financial derivatives based on their different properties like, plain. Simple or straight forward, composite, joint or hybrid, synthetic, leveraged, mildly leveraged, customized or OTC traded, standardized or organized exchange traded, regulated and unregulated etc. are available in the market.

Due to complexity in nature, it is very difficult to classify the financial derivatives, so in the present context, the basis financial derivatives which are popular in the market have been described in brief. In simple form, the derivatives can be classified into different categories which are shown in the following figure.

Figure : Classification of Derivatives

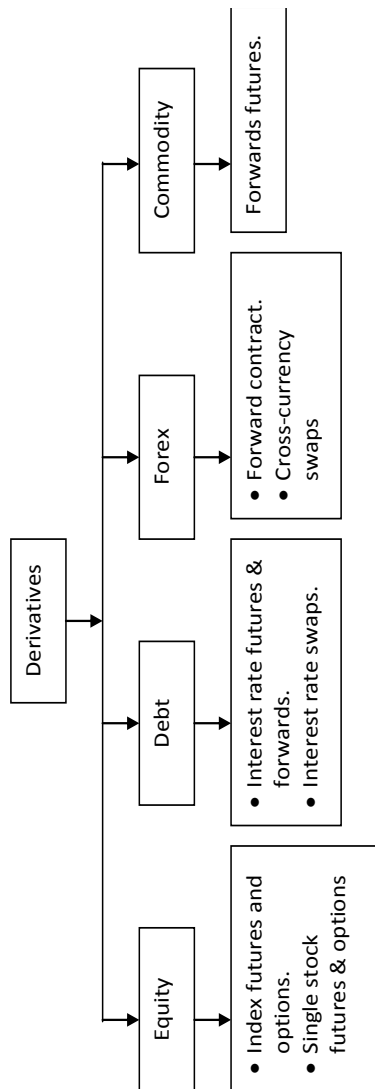


Classification of derivatives contracts in India

The Indian financial market woke up to the new generation of financial instrument and the Indian derivatives markets' Odyssey in modern times commenced with forex derivatives in 1997 has also seen the introduction of many

derivatives on different underlying's. Currently the following contracts are allowed for trading in Indian markets:

Figures 2 : Derivatives contracts permitted for trading in India



1.5.1 Forward Contract :

A forward contract is a customized contract between the buyer and the seller where settlement takes place on a specific date in future at a price agreed today. In case of a forward contract the price which is paid/received by the parties is decided at the time of entering into contract. It is simplest form of derivative contract mostly entered by individual in day to day life.

It is contract for delivering the goods. These transactions are spot transactions. It is also known as "specific delivery contract". Forward contract is a cash market transaction in which delivery of the instrument is deferred until the contract has been made. Although the delivery is made in the future, the price is determined on the initial trade date. One of the parties to a forward contract assumes a long position (buyer) and agrees to buy the underlying asset at a certain future date for a certain price. The other party to the contract known as seller assumes a short position and agrees to sell the asset on the same date for the same price. The specified price is referred to as the deliver price. The contract terms like delivery price and the quantity are mutually agreed upon by the parties to the contract. Forward contracts are traded at over-the-counter and are not dealt with on an exchange. Usually traded between two financial institutions or between a financial institution and one of its client. The basic features of a contract are given in brief here as under:

1. Forward contracts are bilateral contracts, and hence, they are exposed to the counter party risk. There is risk of non-performance of obligation either of the parties, so these are riskier than to futures contracts.
2. Each contract is custom designed, and hence, is unique in terms of contract size, expiration date, the asset type, quality etc.
3. In forward contract, one of the parties takes a long position by agreeing to buy the asset at a certain specified future date. The other party assumes a short position by agreeing to sell the same asset at the same date for the same specified price. A party with no obligation offsetting the forward contract is said to have an open position. A party with a close position is, sometimes, called a hedger.
4. The specified price in a forward contract is referred to as the delivery price. The forward price for a particular forward contract at a particular time is the delivery price that would apply if the contract were entered into at that time. It is important to differentiate between the forward price and the delivery price. Both are equal at the time the contract is entered into. However, as time passes, the forward price is likely to change whereas the delivery price remains the same.
5. In the forward contract, derivative asset can often be contracted from the combination of underlying assets; such assets are often known as synthetic assets in the forward market.
6. In the forward market, the contract has to be settled by delivery of the asset on expiration date. In case the party wishes to reverse the contract, it has to compulsory go to the same counter party, which may dominate and command the price it wants as being in a monopoly situation.
7. In a forward contract, covered party or cost of carry relations are relation between the prices of forward and underlying assets.
8. Forward contract are very popular in foreign exchange market as well as interest rate bearing instruments. Most

of the large and international banks quote the forward rate through their 'forward desk' lying within their foreign exchange trading room. Forward foreign exchange quotes by these banks are displayed with the spot rates.

1.5.2 Futures contracts

Futures contracts are an agreement between two parties to buy or sell a specified quantity of an asset at a specified price and at a specified time and place. Future contracts are normally traded on an exchange which sets the certain standardized norms for trading in futures contracts. The features of a futures contract may be specified as follows:

1. Futures are traded only in organized exchanges.
2. Futures contract required to have standard contract terms.
3. Futures exchange has associated with clearing house.
4. Futures trading required margin payment and daily settlement.
5. Futures positions can be closed easily.
6. Futures markets are regulated by regulatory authorities like SEBI.
7. The futures contracts are executed on expiry date.
8. The futures prices are expressed in currency units, with a minimum price movement called a tick size.

The quality of positive economic theory explains about its ability with precision clarity and simplicity. The main characteristics of futures explained by a good economic theory are as follows:

1. There is a limited number of actively traded products with futures contracts.
2. The trading unit is large and indivisible.
3. It has no more than maturity of 3 months.
4. The success ratio of new contract is about 25% in the world financial markets.
5. Futures are seldom used by farmers.
6. There are both commercial and non-commercial users of futures contract in interest rates and foreign exchange.
7. The main use of the future by the commercial users is to hedge corresponding cash and forward positions.
8. The positions of the non-commercial users almost entirely speculative positions.
9. In foreign exchange futures, the positions of the commercial users are unbalanced.

There are different types of contracts in financial futures which are traded in the various futures market of the world. The followings are the important types of financial futures contract:

1. Stock future or equity futures
2. Stock index futures
3. Currency futures
4. Interest rate futures

Single stock futures: Single stock future is a type of futures contracts between two parties to exchange a specified number of stocks in a company for a agreed today (the future price is the strike price) with delivery occurring at a specified future date, the delivery date. The Contracts are traded on futures exchanges. the party agreeing to take delivery of the

underlying stock in future is buyer of contract, is said to be long and party agreeing to deliver the stock in future is seller of the contract, is said to be short. The expectations of the parties the buyer hopes or expects that the price is going to increase, while the seller hopes or expects that the price is going to decrease.

1.5.3 Options contract

Options are derivative contract that give the right, but not the obligation to either buy or sell a specific underlying security for a specified price on or before a specific date. In theory, option can be written on almost any type of underlying security. Equity (stock) is the most common, but there are also several types of non-equity options, based on securities such as bonds, foreign currency, indices or commodities such as gold or oil.

The person who buys an option is normally called the buyer or holder. Conversely, the seller is known as the seller or writer. Again we can say "An option is a particular type of a contract between two parties where one person gives the other person the right to buy or sell a specific asset at a specified price within a specified time period." Today, options are traded on a variety of instruments like commodities, financial assets as diverse as foreign exchange, bank times deposits, treasury securities, stock, stock indexes, petroleum products, food grains, metals etc. The main characteristics of options are following:

1. Options holders do not receive any dividend or interest.
2. Option yield only capital gains.
3. Options holder can enjoy a tax advantages.
4. Options are traded on OTC and in all recognized stock exchanges.
5. Options holders can control their rights on the underlying assets.
6. Options create the possibility of gaining a windfall profit.
7. Options holder can enjoy a much wider risk-return combinations.
8. Options can reduce the total portfolio transaction costs.
9. Options enable with the investors to gain a better returns with a limited amount of investment.

A call which is the right to buy shares under a negotiable contract and which do not carry any obligation. The buyers have the right to receive the delivery of assets are known as 'call option.'

In this option the owner has the right to sell the underlying asset under the negotiable contract. Put option holder has the right to receive the payment by surrendering the asset.

The writer of an option is a stock broker, member or a security dealer. The buyer of an option pays a price depending on the risk of underlying security and he as an investor or a dealer or trader.

The basic features of options or followings:

1. The option is exercisable only by the owner namely the buyer of the option.
2. The owner has limited liability.
3. Owners of options have no voting rights and dividend right.

4. Options have high degree of risk to the option writers.
5. Options involving buying counter positions by the option sellers.
6. Flexibility in investors needs.
7. No certificates are issued by the company.
8. Options are popular because they allow the buyer profits from favorable movement in exchange rate.

Options can be classified into different categories like:

- (i) Call options
- (ii) Put options
- (iii) Exchange traded options
- (iv) OTC traded options
- (v) American options
- (vi) European options
- (vii) Commodity options
- (viii) Currency options
- (ix) Stock options
- (x) Stock Index options

Stock index option: Stock index option is a type of option. The option may be tied to the price of broad based indexes or narrow based indexes. A stock index option provides the right to trade a specific stock index at a specified price by a specified expiration date. A call option on a stock index gives you right to buy the index, and a put option on a stock index give you the right to sell the index option on stock indexes are similar to exchange traded funds (ETFs), the difference being that (ETFs) values change throughout the day whereas the value on stock index options change at the end of each trading day. Therefore, profit/loss on an index option is based on the markets closing price for the day, not on any price during the market's open hours. If an index option is exercised before the close of the market, the buyer of the option will in-or out-of-the -money for an additional amount equal to the difference between the closing price and the exercise price. If the market closes above the intra -day exercise price, then the option will accrue an additional loss, and if the market closes below the indra-day exercise price, the option will accrue an additional gain. For this reason, index options are typically closed out after the market has closed.

1.5.4 Swaps contract

A swap is an agreement between two or more people or parties to exchange sets of cash flows over a period in future.

Swaps are agreements between two parties to exchange assets at predetermined intervals. Swaps are generally customerised transactions. The swaps are innovative financing which reduces borrowing costs, and to increase control over interest rate risk and forex exposure. The swap includes both spot and forward transactions in a single agreement. Swaps are at the centre of the global financial revolution. Swaps are useful in avoiding the problems of unfavorable fluctuation in forex market. The parties that agree to the swap are known as counter parties. The two commonly used swaps are interest rate swaps and currency swaps.

Interest rate swaps which entail swapping only the interest related cash flows between the parties in the same currency.

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

Section-II

2. Historical development of derivative market in India

Derivative markets in India have been in existence in one form or the other for a long time. In the area of commodities, the Bombay Cotton Trade Association started future trading way back in 1875. This was the first organized futures market. Then Bombay Cotton Exchange Ltd. in 1893, Gujarat Vyapari Mandall in 1900, Calcutta Hesstan Exchange Ltd. in 1919 had started future market. After the country attained independence, derivative market came through a full circle from prohibition of all sorts of derivative trades to their recent reintroduction. In 1952, the government of India banned cash settlement and options trading, derivatives trading shifted to informal forwards markets. In recent years government policy has shifted in favour of an increased role at market based pricing and less suspicious derivatives trading. The first step towards introduction of financial derivatives trading in India was the promulgation at the securities laws (Amendment) ordinance 1995. It provided for withdrawal at prohibition on options in securities. The last decade, beginning the year 2000, saw lifting of ban of futures trading in many commodities. Around the same period, national electronic commodity exchanges were also set up. The more detail about evolution of derivatives are shown in table No.1 with the help of the chronology of the events. This table is presenting complete historical developments.

Table 1: A Chronology of events: Financial Derivatives in India

S. No.	Progress Date	Progress of Financial Derivatives
1	1952	Enactment of the forward contracts (Regulation) Act.
2	1953	Setting up of the forward market commission.
3	1956	Enactment of SCRA
4	1969	Prohibition of all forms of forward trading under section 16 of SCRA.
5	1972	Informal carry forward trades between two settlement cycles began on BSE.
6	1980	Khuso Committee recommends reintroduction of futures in most commodities.
7	1983	Govt. ammends bye-laws of exchange of Bombay, Calcutta and Ahmedabad and introduced carry forward trading in specified shares.
8	1992	Enactment of the SEBI Act.
9	1993	SEBI Prohibits carry forward transactions.

10	1994	Kabra Committee recommends futures trading in 9 commodities.
11	1995	G.S. Patel Committee recommends revised carry forward system.
12	14th Dec. 1995	NSE asked SEBI for permission to trade index futures
13	1996	Revised system restarted on BSE.
14	18th Nov. 1996	SEBI setup LC Gupta committee to draft frame work for index futures
15	11th May 1998	LC Gupta committee submitted report
16	1 st June 1999	Interest rate swaps/forward rate agreements allowed at BSE
17	7th July 1999	RBI gave permission to OTC for interest rate swaps/forward rate agreements
18	24th May 2000	SIMEX chose Nifty for trading futures and options on an Indian index
19	25th May 2000	SEBI gave permission to NSE & BSE to do index futures trading
20	9th June 2000	Equity derivatives introduced at BSE
21	12th June 2000	Commencement of derivatives trading (index futures) at NSE
22	31st Aug. 2000	Commencement of trading futures & options on Nifty at SIMEX
23	1st June 2001	Index option launched at BSE
24	Jun 2001	Trading on equity index options at NSE
25	July 2001	Trading at stock options at NSE
26	9 th July 2001	Stock options launched at BSE
27	July 2001	Commencement of trading in options on individual securities
28	1st Nov. 2001	Stock futures launched at BSE
29	Nov. 2001	Commencement of trading in futures on individual security
30	9th Nov. 2001	Trading of Single stock futures at BSE
31	June 2003	Trading of Interest rate futures at NSE
32	Aug. 2003	Launch of futures & options in CNX IT index
33	13th Sep. 2004	Weekly options of BSE
34	June 2005	Launch of futures & options in Bank Nifty index
35	Dec. 2006	'Derivative Exchange of the Year by Asia risk magazine
36	June 2007	NSE launches derivatives on Nifty Junior & CNX 100
37	Oct. 2007	NSE launches derivatives on Nifty Midcap -50
38	1st Jan. 2008	Trading of Chhota (Mini) Sensex at BSE
39	1st Jan.	Trading of mini index futures & options

	2008	at NSE
40	3rd March 2009	Long term options contracts on S&P CNX Nifty index
41	NA	Futures & options on sectoral indices (BSE TECK, BSE FMCG, BSE Metal, BSE Bankex & BSE oil & gas)
42	29 th Aug. 2008	Trading of currency futures at NSE
43	Aug. 2008	Launch of interest rate futures
44	1 st Oct. 2008	Currency derivative introduced at BSE
45	10 th Dec. 2008	S&P CNX Defty futures & options at NSE
46	Aug. 2009	Launch of interest rate futures at NSE
47	7 th Aug. 2009	BSE-USE form alliance to develop currency & interest rate derivative markets
48	18 th Dec. 2009	BSE's new derivatives rate to lower transaction costs for all
49	Feb. 2010	Launch of currency future on additional currency pairs at NSE
50	Apr. 2010	Financial derivatives exchange award of the year by Asian Banker to NSE
51	July 2010	Commencement trading of S&P CNX Nifty futures on CME at NSE
52	Oct. 2010	Introduction of European style stock option at NSE
53	Oct. 2010	Introduction of Currency options on USD INR by NSE
54	July 2011	Commencement of 91 day GOI trading Bill futures by NSE
55	Aug. 2011	Launch of derivative on Global Indices at NSE
56	Sep. 2011	Launch of derivative on CNX PSE & CNX infrastructure Indices at NSE
57	30 th March 2012	BSE launched trading in BRICSMART indices derivatives

Source : Compiled from BSE & NSE website

2.1 Regulation of Derivatives trading in India

The regulatory frame work in India is based on L.C. Gupta Committee report and J.R. Varma Committee report. It is mostly consistent with the international organization of securities commission (IUSCO). The L.C. Gupta Committee report provides a perspective on division of regulatory responsibility between the exchange and SEBI. It recommends that SEBI's role should be restricted to approving rules, bye laws and regulations of a derivatives exchange as also to approving the proposed derivatives contracts before commencement of their trading. It emphasises the supervisory and advisory role of SEBI. It also suggests establishment of a separate clearing corporation.

2.2 Derivatives Market in India

In India, there are two major market namely National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) along with other Exchanges of India are the market for derivatives. Here we may discuss the performance of derivatives products in Indian market.

2.2.1 Derivative products traded at BSE

The BSE started derivatives trading on June 9, 2000 when it launched "Equity derivatives (Index futures-sensex) first time. It was followed by launching various products which are shown in table no.2. They are index options, stock options, single stock futures, weekly options, stocks for: Satyam, SBI, Reliance Industries, Tata Steel, Chhota (Mini) Sensex, Currency futures, US dollar-rupee future and BRICSMART indices derivatives. The table No.2 summarily specifies the derivative products and their date of introduction at BSE.

Table 2 : Derivative products of BSE

S. No.	Introduction date	Derivative Products
1	9 th June 2000	Equity derivatives (Index futures - Sensex)
2	1 st June 2001	Index options launched (Index options -sensex)
3	9 th July 2001	Stock options launched (Stock option on 109 stocks)
4	9 th Nov. 2002	Stock futures launched (Stock futures on 109 Stocks)
5	13 th Sep. 2004	Weekly options on 4 Stocks
6	1 st Jan. 2008	Chhota (mini) sensex
7	NA	Futures options on sectoral indices (namely BSE TECK, BSE FMCG, BSE metal, BSE Bankex & BSE oil & gas)
8	1 st Oct. 2008	Currency derivative introduced (currency futures on US Dollar)
9	30 th March 2012	Launched BRICSMART indices derivatives

Source : Compiled from BSE website

2.2.2 Derivative products traded at NSE

The NSE started derivatives trading on June 12, 2000 when it launched "Index Futures S & P CNX Nifty" first time. It was followed by launching various derivative product which are shown in table no.3. They are index options, stock options, stock future, interest rate, future CNX IT future and options, Bank Nifty futures and options, CNX Nifty Junior futures and options, CNX100 futures and options, Nifty Mid Cap-50 future and options, Mini index futures and options, Long term options. Currency futures on USD-rupee, Defty

future and options, interest rate futures, SKP CNX Nifty futures on CME, European style stock options, currency options on USD INR, 91 days GOI T.B. futures, and derivative an global indices and infrastructures indices. The table no.3 presents a description of the types of derivative product traded at NSE and their data of introduction at NSE.

Table 3: Derivative products of NSE

S. No.	Introduction date	Derivative Products
1	12 th June 2000	Index futures - S&P CNX Nifty
2	4 th June 2001	Index Options - S&P CNX Nifty
3	2 nd July 2001	Stock options - on 233 stocks
4	9 th Nov. 2001	Stock futures on 233 stocks
5	23 rd June 2003	Interest rate futures - T. Bills & 10 years Bond
6	29 th Aug. 2003	CNX IT futures & options
7	13 th June 2005	Bank Nifty futures & options
8	1 st June 2007	CNX Nifty Junior Futures & Options
9	1 st June 2007	CNX 100 futures & options
10	5 th Oct. 2007	Nifty midcap - 50 futures & options
11	1 st Jan. 2008	Mini index futures & options - S&P CNX Nifty Index
12	3 rd March 2008	Long term options contracts on - S&P CNX Nifty Index
13	29 th Aug. 2008	Currency futures on US Dollar Rupee
14	10 th Dec. 2008	S&P CNX Defty Futures & options
15	Aug. 2009	Launch of Interest rat futures
16	Feb. 2009	Launch of currency futures on additional currency pair
17	July 2010	S&P CNX Nifty futures on CME
18	Oct. 2010	Introduction of European style stock options
19	Oct. 2010	Introduction of Currency options on USD INR
20	July 2011	start 91 day GOI Treasury Bill-futures
21	Aug. 2011	Launch of derivatives on global indices
22	Sep. 2011	Launch of derivatives on CNX PSE & CNX Infrastructure indices

Source : Compiled from NSE website.

2.3 Growth of Indian derivatives market

The NSE and BSE are two major Indian markets have shown a remarkable growth both in terms of volumes and numbers of traded contracts. Introduction of derivatives

trading in 2000, in Indian markets was the starting of equity derivative market which has registered on explosive growth and is expected to continue the same in the years to come. NSE alone accounts 99% of the derivatives trading in Indian markets. Introduction of derivatives has been well received by stock market players. Derivatives trading gained popularity after its introduction in very short time.

If we compare the business growth of NSE and BSE in terms of number of contracts traded and volumes in all product categories with the help of table no.4, table no.5 and table no.12 which shows the NSE traded 636132957 total contracts whose total turnover is Rs.16807782.22 cr in the year 2012-13 in futures and options segment while in currency segment in 483212156 total contracts have traded whose total turnover is Rs.2655474.26 Cr in same year.

In case of BSE the total numbers of contracts traded are 150068157 whose total turnover is Rs.3884370.96 Cr in the year 2012-13 for all segments. In the above case we can say that the performance of BSE is not encouraging both in terms of volumes and numbers of contracts traded in all product categories. The table no.4, table no.5 and table no.12 summarily specifies the updated figures since 2003-04 to 2012-13 about number of contracts traded and total volumes in all segments.

Table 4 : Business growth of NSE in FO Segment

Year	Total No. of Contracts	Total Turnover (Rs. Cr.)	Average Daily Turnover (Rs. Cr.)
2012-13	636132957	16807782.22	120055.59
2011-12	1205045464	31349731.74	125902.54
2010-11	1034212062	29248221.09	115150.48
2009-10	679293922	17663664.57	72392.07
2008-09	657390497	11010482.20	45310.63
2007-08	425013200	13090477.75	52153.30
2006-07	216883573	7356242	29543
2005-06	157619271	4824174	19220
2004-05	77017185	2546982	10107
2003-04	56886776	2130610	8388

Source : Compiled from NSE website.

Table 5 : Business growth of NSE in CD Segment

Year	Total No. of Contracts	Total Turnover (Rs. Cr.)	Average Daily Turnover (Rs. Cr.)
2012-13	483212156	2655474.26	19383.02
2011-12	973344132	4674989.91	19479.12
2010-11	749602075	3449787.72	13854.57

2009-10	378606983	1782608.04	7427.53
2008-09	32672768	162272.43	1167.43

Source : Compiled from NSE website.

Section-III

3-Statistical data (Information)

This section contains the statistical data or information about Indian derivatives markets namely: product wise turnover of FO segment at NSE, product wise turnover of CD segment at NSE, Number of contract traded at NSE in FO segment, number of contracts traded at NSE in CD segment, Average daily transaction at NSE in FO segment, average daily transactions at NSE in CD segment, Product wise turnover of futures at BSE, product wise turnover of options at BSE, number of contract traded at BSE in future segment, number of contract, traded at BSE in option segment and average daily transaction at BSE in all segments.

After analyzing the data given in table no.6, 7, 8, 9, 10, 11, 13, 14, 15, 16, and 17) we can say that they are encouraging growth and developing. Industry analyst feels that the derivatives market has not yet, realized its full potential in terms of growth and trading. Analyst points out that the equity derivative market on the NSE and BSE has been limited to only four product Index-futures, index options and individual stock future and options, which in turn are limited to certain select stock only. Although recently NSE and BSE has added some more products in their derivative segment but still it is far less than the depth and variety of product prevailing across many developed capital markets.

Table 6 : Product wise Turnover of FO Segment at NSE

Product	Index Option Notional Turnover (Rs. Cr.)	Stock Option Notional Turnover (Rs. Cr.)	Total Turnover (Rs. Cr.)	Average Daily Turnover (Rs. Cr.)
	12228169.28	910995.66	16807782.22	120055.59
	22720031.64	977031.13	31349731.74	125902.54
	18365365.76	1030344.21	29248221.09	115150.48
	8027964.20	506065.18	17663664.57	72392.07
	3731501.84	229226.81	11010482.20	45310.63
	1362110.88	359136.55	13090477.75	52153.30
	791906	193795	7356242	29543
	338469	180253	4824174	19220
	121943	168836	2546982	10107
	52816	217207	2130610	8388

Year	Index Futures Turnover (Rs. Cr.)	Stock Futures Turnover (Rs. Cr.)
2012-13	1522594.88	2146022.55
2011-12	3577998.41	4074670.73
2010-11	4356754.43	5495766.70
2009-10	3934388.67	5195246.64
2008-09	3570111.40	3479642.12
2007-08	3820667.27	7548563.23
2006-07	25399574	3830967
2005-06	1513755	2791697
2004-05	772147	1484056
2003-04	554446	1305939

Source : Compiled from NSE website.

Table 7 : Product wise Turnover of CD Segment at NSE

Year	Currency Futures Turnover (Rs. Cr.)	Currency Options Notional Turnover (Rs. Cr.)	Total Turnover (Rs. Cr.)	Average Daily Turnover (Rs. Cr.)
2012-13	1946017.13	709457.13	2655474.26	119383.02
2011-12	3378488.92	1296500.98	4674989.91	19479.12
2010-11	3279002.13	170785.59	3449787.72	13854.57
2009-10	1782608.04	-	1782608.04	7427.53
2008-09	162272.43	-	162272.43	1167.43

Source : Compiled from NSE website.

Table 8 : Number of Contract traded at NSE in FO Segment

Year	Index Futures No. of Contracts	Stock Futures No. of Contracts	Index Options No. of Contracts	Stock Options No. of Contracts	Total No. of Contracts
2012-13	61338869	80146123	462515327	32132638	636132957
2011-12	146188740	158344617	864017736	36494371	1205045464
2010-11	165023653	186041459	650638557	32508393	1034212062
2009-10	1783068889	145591240	341379523	14016270	679293922
2008-09	210428103	221577980	212088444	13295970	657390497
2007-08	156598579	203587952	53366038	9460631	425013200
2006-07	81487424	104955401	25157438	5283310	216883573
2005-06	58537886	80905493	12935116	5240776	157619271
2004-05	21635449	47043066	3293558	5045112	77017185
2003-04	17191668	32368842	1732414	5583071	56886776

Source : Compiled from NSE website.

Table 9 : Number of Contract traded at NSE in CD Segment

Year	Currency Futures No. of Contracts	Currency Options No. of Contracts	Total No. of Contracts
2012-13	354111488	129100668	483212156
2011-12	701371974	271972158	973344132
2010-11	712181928	37420147	749602075
2009-10	378606983	-	378606983
2008-09	32672768	-	32672768

Source : Compiled from NSE website.

Table 10 : Average daily transaction at NSE in FO Segment

Year	Total No. of Contracts	Total Turnover (Rs. Cr)	Average Daily Turnover (Rs. Cr.)
2012-13	636132957	16807782.22	120055.59
2011-12	1205045464	31349731.74	125902.54
2010-11	1034212062	29248221.09	115150.48
2009-10	679293922	17663664.57	72392.07
2008-09	657390497	11010482.20	45310.63
2007-08	425013200	13090477.75	52153.30
2006-07	216883573	7356242	29543
2005-06	157619271	4824174	19220
2004-05	77017185	2546982	10107

2003-04	56886776	2130610	8388
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Source : Compiled from NSE website.

Table 11: Average daily transaction at NSE in CD Segment

Year	Total No. of Contracts	Total Turnover (Rs. Cr.)	Average Daily Turnover (Rs. Cr.)
2012-13	483212156	2655474.26	19383.02
2011-12	973344132	4674989.91	19479.12
2010-11	749602075	3449787.72	13854.57
2009-10	378606983	1782608.04	7427.53
2008-09	32672768	162272.43	1167.43

Source : Compiled from NSE website.

Table 12 : Business growth at BSE in all Segment

Year	Total Contracts	Total Turnover (Rs Cr)	Average Daily Turnover (Rs Cr)	Trading Days
2012-13	150068157	3884370.96	30828.34	126
2011-12	32222825	808475.99	3246.89	249
2010-11	5623	154.33	0.61	255
2009-10	9028	234.06	1.04	224
2008-09	496502	11774.83	48.46	243
2007-08	7453371	242308.41	965.37	251
2006-07	1781220	59006.62	259.94	227
2005-06	203	8.78	0.14	61
2004-05	531719	16112.32	77.09	209
2003-04	143224	5021.81	81.00	62

Source : Compiled from BSE website.

Table 13 : Product wise turnover of futures at BSE

Year	Index Futures Turnover (Rs Cr)	Equity Futures Turnover (Rs Cr)	Trading Days
2012-13	104188.65	125.98	126
2011-12	178448.83	10215.70	249
2010-11	154.08	0.00	255
2009-10	96.00	0.30	224
2008-09	11757.22	8.49	243
2007-08	234660.16	7609.24	251
2006-07	55490.86	3515.50	227
2005-06	5.00	0.49	61
2004-05	13599.66	212.85	209
2003-04	3082.63	1680.34	62

Source : Compiled from BSE website.

Table 14 : Product wise turnover of option at BSE

Year	Index option Call Turnover (Rs Cr)	Index option Put Turnover (Rs Cr)	Equity option Call Turnover (Rs Cr)	Equity option Put Turnover (Rs Cr)	Trading Days
2012-13	1967091.23	1812758.37	45.13	162.26	126
2011-12	200089.57	418252.79	1277.27	191.82	249
2010-11	0.00	0.25	0.00	0.00	255
2009-10	137.76	0.00	0.00	0.00	224
2008-09	6.11	3.01	0.00	0.00	243
2007-08	31.00	7.66	0.21	0.14	251
2006-07	0.06	0.00	0.16	0.04	227
2005-06	3.20	0.00	0.09	0.00	61
2004-05	1470.61	826.62	2.08	0.50	209
2003-04	0.00	0.00	139.07	119.77	62

Source : Compiled from BSE website.

Table 15 : Number of Contract traded at BSE in Future Segment

Year	Index Futures Contracts	Equity Futures Contracts	Trading Days
2012-13	4078634	4684	126
2011-12	7073334	326342	249
2010-11	5613	0	255
2009-10	3744	8	224
2008-09	495830	299	243
2007-08	7157078	295117	251
2006-07	1638779	142433	227
2005-06	89	12	61
2004-05	44630	6725	209
2003-04	103777	33437	62

Source : Compiled from BSE website.

Table 16 : Number of Contract traded at BSE in Option Segment

Year	Index Options call Contracts	Index Options Put Contracts	Equity Options call Contracts	Equity Options Put Contracts	Trading Days
2012-13	74453125	71522194	1749	7771	126
2011-12	7206514	17569130	39848	7657	249
2010-11	0	10	0	0	255
2009-10	5276	0	0	0	224
2008-09	251	122	0	0	243
2007-08	951	210	9	6	251
2006-07	2	0	5	1	227
2005-06	100	0	2	0	61
2004-05	48065	27210	72	17	209
2003-04	0	0	3466	2544	62

Source : Compiled from BSE website.

Table 17: Average daily Transaction at BSE in all Segment

Year	Total Contracts	Total Turnover (Rs Cr)	Average Daily Turnover (Rs Cr)	Trading Days
2012-13	150068157	3884370.96	30828.34	126
2011-12	32222825	808475.99	3246.89	249
2010-11	5623	154.33	0.61	255
2009-10	9028	234.06	1.04	224
2008-09	496502	11774.83	48.46	243
2007-08	7453371	242308.41	965.37	251
2006-07	1781220	59006.62	259.94	227
2005-06	203	8.78	0.14	61
2004-05	531719	16112.32	77.09	209
2003-04	143224	5021.81	81.00	62

Source: Compiled from BSE website.

Section - IV

4. Status of Indian derivatives market vis-à-vis global derivatives market.

The derivative segment has expanded in the recent years in substantial way both globally as well as in the Indian capital market. The figures revealed by "world federation of exchanges (WFE)" website to compare the trading figures of 14 selected stock exchanges of America (four exchanges), Asia Pacific (seven exchanges) and EAME (three exchanges) region. Which are summarily specifies in Table No.18, Table No.19, Table No.20 and Table No.21 related to the number of contracts traded and notional value since 2003 to 2012. These tables show the Indian segment has expanded phenomenally as compared to the global segment. The Notional value of NSE options is 354648.1941 lakhs USD and number of contracts are 67458468 and the notional value at NSE futures is 39228.38563 lakhs USD and number of contracts are 7815624 in 2012 which are so more in compare of 2003. These figures are displaying a more than six to seven times increase over the 10 years period. In case of BSE, the notional value of BSE options is 56993.49322 lakhs USD and number of contracts are 10937357 and the notional value of BSE future is 856.1076879 lakhs USD and number of contracts are 163740 upto Sep. 2012 at global level the increase is less. While Korea, NYSE Euronext (Europe). Hongkong, Tokyo are growing fast in global level, other exchanges are also following at global level which are shown in followings tables:

Table 18: Global trend in Notional Value of Futures Trading (Unit of Currency : 00000 USD)

Exchange Name	31.12.2003	31.12.2004	31.12.2005	31.12.2006	31.12.2007	31.12.2008	31.12.2009	31.12.2010	31.12.2011	31.12.2012
BM&F BOVESPA	NA	NA	NA	NA	NA	NA	NA	51882.55012	30231.27647	51110.21788
Bourse de Montreal	238056.9582	25550.82624	36111.98713	64000.32483	85857.12386	45724.51247	37761.35068	66882.39032	67433.95836	72174.76975
Chicago Board Options Exchange	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NASDAQ OMX	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHILX	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ASX SFE Derivatives Trading	44976.10006	48939.76892	53007.62911	97447.57626	124437.1762	73206.13973	101212.4292	115967.8357	119797.2894	137909.6402
BSE India	NA	NA	NA	2094.49818	5148.669751	6.190574192	0.148275492	2.880410712	7070.046135	856.1076879
Hong Kong Exchange	49688.28894	77293.99051	90289.83158	174351.8959	324926.1292	203888.9182	318204.0409	343339.851	217632.6921	320049.7001
Korea Exchange	194839.5099	230599.4735	283750.0638	327117.3914	435325.4751	415430.8971	615112.7044	6649101.282	607762.9922	602488.5273
NSE India	14329.35627	13419.25091	40722.75761	50601.14068	72905.40791	55566.43548	70806.09434	71189.03278	57847.21965	39228.38563
Singapore Exch.	508.3907437	96796.83238	146360.6988	148270.0124	194260.2779	NA	NA	NA	NA	NA
Tokyo SE Group	110464.4578	148225.0639	297894.8218	225176.0042	288126.9588	174631.7564	190211.8686	183282.8369	157606.1124	191645.1605
BME Spanish Exchanges	32907.69902	44174.19174	51643.66396	104626.9778	121917.8216	58397.5101	72468.60832	63655.71505	31424.97728	35420.95716
Johannesburg SE	14890.44644	22010.58338	34757.55617	51156.2777	87066.66715	28814.62664	48081.95904	63668.27558	56199.58066	64154.72659
NYSE Euronext (Europe)	296427.0938	35864.2111	417280.0189	630297.9938	823255.2632	493151.7347	552050.2152	5774523.748	476932.3464	555762.254

Source : Compiled from WFE website.

Table 19: Global trend in "Number of Contract Traded" in futures trading

Exchange Name	31.12.2003	31.12.2004	31.12.2005	31.12.2006	31.12.2007	31.12.2008	31.12.2009	31.12.2010	31.12.2011	31.12.2012
BM& FBOVESPA	NA	NA	NA	NA	NA	NA	NA	1241180	1618153	1708490
Bourse de Montreal	327596	302033	333219	500314	522706	511123	437589	444106	491890	507285
Chicago Board Options Exchange	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NASDAQ OMX PHLX	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ASX Derivatives Trading	610359	667962	665465	941257	986053	1239110	961977	949215	1116824	1200303
BSE India	NA	NA	NA	271796	678222	2131	27	435	1569569	163740
Hong Kong Exchange	723056	1028257	1155795	1794072	2352382	3257388	3287830	3377963	3360793	3693018
Korea Exchange	4482804	4252688	3344465	3330666	3353004	7550228	665107	5917951	5740679	5167652
NSE India	1875486	1447464	6615032	5798118	9609209	20007895	13337833	11406712	13886601	7815624
Singapore Exch.	1278126	1567484	2878338	2583404	3352242	3801287	4890223	4652726	4906518	6345500
Tokyo SE Group	1187790	1380132	2196354	1453729	2098937	2038901	2172504	1788557	1774461	2329206
BME Spanish Exchanges	337192	357888	407899	506910	723094	653221	590129	685398	437300	506359
Johannesburg SE	1103367	1170370	1530453	1873847	2642656	1630389	1861306	2020441	2065377	2128495
NYSE Euronext (Europe)	4798271	4822112	7244250	6342391	7238890	8375026	7551988	7704204	7141702	7939289

Source : Compiled from site website.

Table 20: Global trend in Notional Value of Option Trading (Unit of Currency : 000000 USD)

Exchange Name	31.12.2003	31.12.2004	31.12.2005	31.12.2006	31.12.2007	31.12.2008	31.12.2009	31.12.2010	31.12.2011	31.12.2012
BM& FBOVESPA	1266.970337	1676.27259	11660.920074	4018.873878	4882.817978	1755.047414	5597.232676	11807.86747	14304.06569	19185.56092
Bourse de Montreal	71.18964922	9.180437323	154.0832049	67.02738443	89.15906788	175.3653666	97.29112026	444.8022345	321.123441	352.84232764
Chicago Board Options Exchange	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NASDAQ OMX PHLX	232.6	124.78	281.63	151.17	351.04	31926.73	279.28	NA	NA	NA
ASX Derivatives Trading	2066.992164	3037.077683	3265.544308	3595.499933	8224.778295	8897035992	3104.146056	4161.541615	3323.30328	4619.540349
BSE India	NA	NA	NA	0	0	0	0.674760933	0	1302.672065	56993.49322
Hong Kong Exchange	9316.167757	13747.21783	24232.41297	52870.09116	56997.2042	37372.72727	100410.2344	140463.8718	92439.93511	148971.4044
Korea Exchange	2002755.779	1888663.188	2932627.871	3548090.057	4273950.803	2758703.467	483307.533	5470040.647	4687462.066	NA
NSE India	1195.691178	2234.030138	9550.514352	18011.51491	26174.14944	64543.20231	162603.8638	339769.7149	397900.9048	354648.1941
Singapore Exch.	476.9475338	697.8359177	1515.004811	2694.147168	1433.650573	NA	NA	NA	NA	NA
Tokyo SE Group	1428917906	1441820879	553696937	NA	NA	NA	NA	NA	NA	NA
BME Spanish Exchanges	3638.216971	3775.587875	5302.642133	12818.43354	14317.04678	11313.2228	11483.27116	5563.442447	3106.114601	4896.829281
Johannesburg SE	0.458426966	519.8875849	648.9176192	294.8034493	1467.051972	293.5525261	380.4611749	334.3571495	183.4011454	138.3720865
NYSE Euronext (Europe)	121083.5015	148308.9031	183832.5697	307198.0485	428906.4327	344570.1547	271474.8934	208312.3155	179455.5368	212911.3598

Source : Compiled from site website.

Table 21: Global trend in "Number of Contract Traded" in Option trading

Exchange Name	31.12.2003	31.12.2004	31.12.2005	31.12.2006	31.12.2007	31.12.2008	31.12.2009	31.12.2010	31.12.2011	31.12.2012
BM& FBOVESPA	172653	174397	81859	63070	13839	10447	13875	28320	46185	64680
Bourse de Montreal	3043	2238	2802	1053	1066	9916	1475	5734	4688	49542
Chicago Board Options Exchange	10597410	NA	16489906	21585986	15337828	16147785	19604960	19539761	20579901	26494033
NASDAQ OMX PHLX	367729	347362	536781	374977	471615	188236	303185	NA	NA	NA
ASX Derivatives Trading	50073	43745	43004	42478	58339	14148	29474	34256	30830	40680
BSE India	NA	NA	NA	0	0	0	120	0	281600	10937357
Hong Kong Exchange	117753	158666	268035	459780	359831	497265	841674	1120385	985154	1514755
Korea Exchange	230836792	173874552	173142430	180790136	193784635	250504033	264047489	236467426	219668350	52003115
NSE India	156077	239207	1540181	2021895	3428425	21158779	29525940	50844431	66880013	67458468
Singapore Exch.	127330	13046	22092	45081	21182	8281	19875	136404	134094	548354
Tokyo SE Group	1030	2880	5600	4292	3820	6444	12544	4686	2106	1151
BME Spanish Exchanges	31132	30589	41092	68720	645018	882955	670338	420626	279309	493982
Johannesburg SE	1089420	841018	968020	517168	1839549	267137	699905	308533	309590	200150
NYSE Euronext (Europe)	6454357	5127883	2841054	3584063	4207611	3803614	4211387	3187768	3181717	3032340

Source : Compiled from site website.

Section-V

The global financial crisis in 2008

5.1 Pre-crisis scene: dominances of stock future:

In pre-crisis scene the NSE and BSE observed dominance of single stock futures centrals. This dominance has also brought globally at position to NSE and BSE in terms of number of contract trades in previous years. The trading in single stock future in India did achieve the position of top product traded in India. It was due to merely speculative nature of this instrument as a substitute for another erstwhile prevalent speculative arrangement known as carry forward or

Badla system. As single stock future poses most of the traits of Badla market participants whole heartedly welcomed their introduction. The trading in these product opened bigger horizon for new business opportunities. In fact within days of their inception the trading in stock future surpassed trading in other available derivative product and eventually the cash management of NSE and BSE. Single stock futures' trading has grown exponentially not only in the context of Indian derivatives market but also in terms of its global trade ranking.

Stock future offers various advantages to the investors which have contributed to the growth of this sub-segment of equity derivatives segment of NSE and BSE. As opposed to Index futures, stock futures and lucrative to form risk free profitable arbitrage opportunities because the underlying asset is available for trading in the cash market. Some other advantages offered by these instruments are: potential for leveraging, cost efficient than options, avoiding short-sale restriction and supplements other derivative products.

Due to compelling factor & features, the turnover of stock futures sub-segment surpassed the total turnover of the entire cash segment of NSE and BSE in coming years at their introduction itself. Stock futures contracts set an unprecedented record of daily turnover. The relative share of stock future at NSE and BSE has been observing a decline, both in terms of the number of contracts traded and stock futures turnover in total turnover. The world financial crisis of 2008 has proved to be a structural change in the growth path of the stock futures contract. Though the turnover has picked up since then but there is fall in the absolute number of contract traded. The relative shares are still declining. It was only after the outbreak of the global financial crisis that the continuous rise in the absolute number of SSFs contracts was reverted back. The temporary disenchantment of the investors from the single stock futures trading was only due to the ill-effects of the futures trading misfired on account of global meltdown. Single stock futures have successfully strived to attain its previous level of contract traded but it is also getting a tough competition from index futures contracts in terms of number of contract traded. Meanwhile, index option has attained an infallible position in term of the number of contracts traded which requires another structural shock to dislocate from its current height. The above data represents the description of the two derivative product in terms of number of contract traded as well as turnover achieved in their respective sub-segments.

5.2 Post crisis scene: Dominance of Index options:

In post crisis scene, the NSE & BSE observed an unprecedented dominance of index option contracts. This new dominance has also brought globally at position to NSE & BSE in terms of number of contracts traded in post years. The much share of index option in compare of stock futures & Index futures is unprecedented in history of equity derivatives market in India. This dominance is associated with other factors like; hedging downside risk, diversification by

the index, redistribution effect and revision in tax treatment, observed for as the derivative products.

Section - VI

6. Summary and concluding remarks.

Financial derivatives have earned a well deserved and extremely significant place among all the financial instruments (products), due to innovation and revolutionized the landscape. Derivatives are tool for managing risk. Derivatives provide an opportunity to transfer risk from one to another. Launch of equity derivatives in Indian market has terms of a vibrant market for exchange-traded derivatives. The equity derivatives market is playing a major role in shaping price discovery. Volatility in financial asset price, integration of financial market internationally, sophisticated risk management tools, innovations in financial engineering and choices at risk management strategies have been driving the growth of financial derivatives worldwide, also in India. Finally we can say there is big significance and contribution of derivatives to financial system. The global financial crisis has proved to be a structural break in the financial derivative segment of NSE & BSE. As has been reflected by the analysis, the turnover structure of NSE & BSE of India, the exchange with dominating position in India, has shown that the derivatives trading has been a substantial & significant component of Indian stock market. Within this segment, the investors have been spotted with their obsession with Single Stock Futures contracts in the pre global financial crisis period. This obsession has now been altered in the post-crisis period.

However, the obsession is now with the Index Option contracts. However, with such preference for Index based derivative products, studies focusing on the interaction of derivatives trading with spot market on aspects of lead-lag relationship, impact on liquidity, transfer of trading, etc. can now be justified to come up with robust conclusions. Such studies have been inconclusive so far in Indian contexts. Nevertheless, such a skewed preference is not desirable situation for an emerging economy like India. Reasonable mix of the derivative products should provide a better alternative to the investors by supplementing the avenues for investment and risk management with the growing maturity of India's derivatives market.

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been extremely encouraging and successful. The growth of derivatives in the recent years has surpassed the growth of its counterpart globally.

The Notional value of option on the NSE increased from 1195.691178 lakhs USD in 2003 to 354648.1941 lakhs USD in 2012 and notional value of NSE futures increased from 14329.35627 lakhs USD in 2003 to 39228.38563 lakhs USD in 2012. India is one of the most successful developing country in

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