



Chapter-4

*Growth and Development of
Financial Derivatives Market
in India*

CHAPTER - IV

GROWTH AND DEVELOPMENT OF FINANCIAL DERIVATIVES MARKET IN INDIA

4.1 Introduction

The derivative market has turned into multi-trillion dollar markets over the years. Globally, the massiveness of the derivatives trading is associated with equity, equity indices, currencies & interest rate.

Availability of different kinds of risk, encourage the market participants to search for ways to manage risk. Finally, they succeed in finding out the risk management tool, which is derivative. As this awareness about risk management grew, competence of derivatives got raised and the market of derivatives developed. Normally, Derivatives markets are an important part of capital market in developed as well as in developing market economies.

Derivatives assist to manage risks, lower funding costs, enhance yields and diversify portfolios. Hence, they are deemed to be highly versatile financial instruments. The Contributions of derivatives are very appreciative for 'changing the face of the finance' of the world. Amazingly, the international markets for derivatives hardly even existed less than three decades ago. Though, today, the derivatives market has multiplied several times its early size and position, a witness to its own quick growth.

Derivatives markets are an important division of capital markets in developed as well as in developing market economies. These tools help in business development by distributing effective price signals related to exchange rates, indices and reference rate or other assets, thus, making both cash and derivatives markets more efficient. These mechanisms also give protection from possible unfavorable market movements and can be used to control or offset exposures by hedging or transferring risks mainly during volatility periods and in so doing reduces costs. It can also help in more efficient allocation of capital across the economy through permitting the movement of unwanted risk and thus, raising productivity.

Even though derivatives activity is scaling new heights every year, which shows that the international market still has a further unaccounted potential for development. In several of the less developed financial markets, derivatives practice is still a limited experience due to various factors. Such markets have a great growth prospective, which should be proficiently knocked.

Derivatives have become more and more important in finance in the last 30 years. Now, Futures and options are traded vigorously on many exchanges all over the world. Financial institutions, fund managers and corporate treasures in the over-the-counter market frequently trade many different types of derivatives contracts, like forward contracts, swaps, options and other derivatives. Bond issues are included in derivatives, used in executive compensation plans, implanted in capital investment opportunities, and so on.

In developed markets, the exercise of financial derivatives has become progressively common. What are the current developments in emerging financial derivatives market like India? The present chapter will address this issue. It will explore the evolution of derivatives trading in India, trading mechanism of Futures and Options, a chronology of events in Indian derivatives market, business growth and development of NSE and BSE etc.

4.2 Historical Evolution of Derivatives Market

Derivatives work as a safeguard from possible unfavorable market movements and can be used to manage or equalize exposures by hedging or transferring risks mainly during volatility, which helps in reducing costs. Through the shifting of unwanted risk, derivative helps to promote more efficient allocation of capital across the economy and improve productivity in the economy. Commodity futures trading has been present since 1953 and in 1999, RBI permitted certain OTC derivatives such as Forward Rate Agreements (FRAs) and Interest Rate Swaps (IRSs) through its guidelines.

It would be interesting to examine the historical development of derivatives market and then observe what further requirement is to be done to expand these markets.

In 1999, the Securities contract (Regulation) Act, 1956 was modified to incorporate derivatives within the ambit of “securities” and the regulatory framework was

developed for derivatives trading. It was already cleared by the Act that derivatives should be legal and valid only if such contracts are traded on approved stock exchange. Therefore, OTC derivatives were prohibited. In July 1999, the OTC rupee derivatives were launched in the form of Forward Rate Agreement (FRAs)/Interest Rate Swaps (IRS). Hence, the three-decade-old prohibition of trading in securities was revoked in March 2000.

Index Futures based on Nifty of NSE and Sensex of BSE was launched in India in June 2000. On June 9, 2000 at 9:55:03 a.m. the first historical trade of 5 contracts of June series was done between M/s Kaji & Maulik Securities Pvt. Ltd. and M/s Emkay Share & Stock Brokers Ltd. at the rate of 4755. (Source: www.bseindia.com) After that in June 2001, the cash settled European Style Index Options; cash settled American Style Stock Options in July 2001 and Stock Futures were introduced in November 2001.

According to world standards, India's experience of the introduction of equity derivatives market was enormously positive. Among all developing markets, National Stock Exchange is become one of the top exchanges in terms of equity derivatives turnover. In the history of two and half years of derivatives trading in the country, the volume of the derivatives segment of the National Stock Exchange was surpassed by the cash market on December 23, 2002. The total volume of NSE's derivatives segment was Rs. 2,123 Crore, which was 107 percent of the Rs. 1981.92 Crore of the cash market. On the other hand the derivatives volume reached Rs. 3796.79 on December 9, 2002, which was lower than the all time high.

On 8th July 2003, BSE (Bombay Stock Exchange) and NSE (National Stock Exchange) were planning to actually introduce new derivatives products because the RBI allowed the introduction of interest rate derivatives. On June 20, 2003, the Union Finance Minister launched the interest rate futures in India. For commodities trading, National Commodity & Derivatives Exchange Limited (NCDEX) commenced its operation in December 2003.

At NSE, the Currency futures were commenced from 29th August 2008 onwards, initially on Dollar rupee bases.

It is important for every investors that they should be aware about derivatives as it has become such important part of the economy that nearly every company every bank, every investor is in some way affected by them.

4.3 Indian Capital Market

Indian Capital market has witnessed a paradigm shift at par with the advanced markets of the world in the last 10 years or so. To compete with the global leaders, business process, functionality, monitoring, regulating mechanisms, hardware, software etc., are all performed. The Indian Capital market has a long history at its back. Presently, there are two major Stock Exchanges in the Indian market i.e. NSE (National Stock Exchange) and BSE (Bombay Stock Exchange). The NSE is a leading stock exchange of India. NSE allows trading in four different segments i.e. Wholesale Debt Market, Capital Market, Futures and Options Segment and Currency Derivatives Segment.

4.3.1 Wholesale Debt Market Segment

In June 1994, NSE started its business in Wholesale Debt market segment. This segment allows the trading platform for broad range of debt securities which consist of State and Central Government securities, T-Bills, PSU Bonds, Corporate debentures, Commercial Papers, Certificate of Deposits etc.

4.3.2 Capital Market Segment

NSE started trading in this segment in November 1995. It proposes a fully automated screen based trading system, which is known as the National Exchange for Automated Trading (NEAT) system. Different types of securities i.e. Equity Shares, warrants, debentures etc. are traded on this system.

4.3.3 Futures & Options Segment

This segment started its operations at NSE in June 2000. It allows trading in derivatives instruments like index futures, index options, stock options and stock futures etc.

4.3.4 Currency Derivatives Segment

On August 29, 2008, Currency Derivatives Segment began its operation at NSE with the start on currency futures trading in US Dollar-Indian Rupee (USD-INR). Another

product of derivatives i.e. interest rate futures was allowed trading since August 31, 2009 on this segment. The Brokers, who are accountable for performing the trade within the terms and conditions set by the stock exchange, are appointed by the Stock Exchange. These exchanges are regulated by SEBI.

4.4 Types of Indian Derivatives Market

Derivatives markets are categories into two types.

4.4.1 Exchange traded market and

4.4.2 OTC

4.4.1 Exchange Traded Market

A derivatives exchange is market where individual trade standardized contracts that have been defined by the exchange. It has existed for a long time. The Chicago Board of Trade was the oldest exchange, which was established in 1848 to bring farmers and merchants together. At the beginning, its main object was to standardize the quantities and qualities of the grains that were traded. The exchange traded trading started in India since June 2000 with the introduction of Index Futures trading on the Bombay Stock Exchange (BSE) and National Stock Exchange of India (NSE). It was followed up by the inception of index options, options on individual securities, and futures on individual securities (Single Stock Futures) on both the exchanges i.e. NSE and BSE since July 2001.

4.4.1.1 NSE (National Stock Exchange)

National Stock Exchange of India is one of the top exchanges in the world in various key factors. The contracts, which are traded, directly relate to the technology and liquidity of the exchange. According to World Federation of Exchange, at International level, NSE has a top first rank for Index Options and, 3rd rank for Stock Futures, 6th rank for Index Futures and 9th rank for Stock Options among top 10 exchanges in the world. Technology at the exchange stayed offstage to accomplish the demand for capacity, reliability and performance ensuring the competitive edge of NSE because of India's number one exchange platform.

The trading system of NSE known, as National Exchange for Automated Trading (NEAT), is a high-tech client server based application. It has uptime record of over

99% with latency in single digit millisecond level for all orders entered into the NEAT system. NSE has regularly enterprise capacity development measures so as to efficiently meet the requirements of increased users and associated trading loads.

4.4.1.2 BSE (Bombay Stock Exchange)

Bombay Stock Exchange (BSE) is the oldest stock exchange in Asia. The richness of the native equity broking industry in India led to the creation of the Native Share Brokers Association in 1875, which later became popular as a Bombay Stock Exchange Limited (BSE).

The trading system converted into an online screen-based order-driven trading system from open outcry system.

- The exchange opened up for foreign ownership (Foreign institutional investment)
- Through ADRs and GDRs, Indian companies permitted to raise capital from abroad.
- Increased the product range (equities/derivatives/debt).
- The book building process was launched and brought in transparency in IPO issuance.
- Depositories for share protection (dematerialization of shares).
- Internet trading (e-broking).

BSE is the first exchange in India and second in the world to acquire an ISO 9001:2000 certifications. BSE become the 4th largest stock exchange in Asia and the 8th largest in the world because on December 2010 the equity market capitalization of the companies listed on it was US \$1.63 trillion. The BSE has the largest number of listed companies in the world.

4.4.2 Over the Counter

The traditional Indian stock markets provided the way to much functional inefficiency, such as lack of liquidity, lack of transparency, unduly long settlement periods and *benami* transactions, which exaggerated the small investors to a great level. For offering improved services to investors, the country's first ring less, scrip less, electronic stock exchange- OTCEI was established in 1992 by country's leading financial institutions Unit Trust of India (UTI), Industrial Credit and Investment

Corporation of India (ICICI), Industrial Development Bank of India (IDBI), SEBI Capital Market, Industrial Finance Corporation of India (IFCI), General Insurance Corporation and its subsidiaries and Can Bank Financial Services

The advantages of the OTC Exchange network are:

- OTCEI has extensively single trading mechanism across the country, which offers greater liquidity and lesser risk of intermediary charges.
- Greater transparency and truthfulness of prices is acquired due to the screen-based scrip less trading.
- The investor come to know the exact prices since the exact price of the transactions is shown on the computer screen at which he/she is trading.
- Faster settlement and transfer method evaluated to other exchanges.

Interest rate swaps and foreign currency forward are the two important OTC markets, which are allowed in India. According to international standards, Indian OTC derivatives markets still remain small in size because credit default swaps were noticeably absent until now. After the present financial crisis is over, the Indian OTC derivatives markets will grow fast once again.

“An over-the-counter (OTC) derivative is a bilateral, privately negotiated agreement that transfers risk from one party to the other”.

The OTC market can be put into five different categories:

- i. Interest rate derivatives
- ii. Foreign exchange derivatives
- iii. Credit derivatives
- iv. Equity linked derivatives and
- v. Commodity derivatives

4.5 Trading Mechanism of Futures

The trading mechanism comprises the specification of contract, the operations of margin accounts, delivery or settlement of the contract, the organization of exchanges, the regulation of the markets, the way in which quotes are made, etc.

4.5.1 The Specification of the Futures Contract & Exchanges

The futures contracts are performed on a particular exchange. At the time of new futures contract, an exchange provides some details regarding the exact nature of the contract of the agreement between the two parties. Further, it must detail the underlying asset, size of the contract, how price will be quoted, where and when delivery will be made, and how the price will be determined.

There are three main functions performed by the Stock Exchanges.

- i) They give and maintain the floor where the members of the exchange perform the future transaction.
- ii) They maintain and implement principled and financial norms, which are applicable to the futures trading undertaken on the exchange.
- iii) The main aim of the exchange is to increase the facilities for futures trading to its members. Hence, they make efforts to promote business interests of the members.

Generally, exchanges have membership organization whose members may be individuals or business units. Limited number of seats is specified for the membership.

There are two types of traders or brokers on the floor of the exchanges i.e., commission brokers and local trader. The Commission brokers charge a fee for performing contracts or trades for their customer on the other hand local traders do business for their own account.

4.5.2 Standardization

The exchange set the standardized terms of futures contracts on which these futures contract are to be traded. Generally each future exchange describes the number of futures contracts, though they are usually limited.

4.5.2.1 The Asset

The most important term of the futures contract is the underlying 'asset'. If the asset is a commodity, there may be some variation in the quality of the available asset in

the marketplace. The quality problems do not occur in financial assets. These are well defined and definite i.e. U.S. dollars and UK pound sterling etc. These assets are not required to specify the grade but there can be differences in features of the assets like treasury bonds, treasury notes, etc.

4.5.2.2 Contract Size

It is an important decision for the exchange. The amount of asset that has to be transferred under one contract is specified by the contract size. Many investors who want to hedge comparatively small exposures or who want to take comparatively small speculative positions are unable to use the exchange if the contract size is too large. Instead, if the contract size is too small, trading may be expensive because there is a cost related with each contract traded.

In such cases, exchanges have launched “mini” contracts to invite small investors.

4.5.2.3 Delivery Months

A futures contract is transferred to by its delivery month. The exchange must clear the exact period during the month when delivery can be made. The delivery period is the whole month for many futures contracts but it varies from contract to contract and is selected by the exchange to fulfill the needs of market participants. Normally, trading stops a few days before the last day on which delivery can be made.

4.5.2.4 Delivery Arrangement

The exchanges specify the place where delivery will be made. It is especially important for commodities that involve considerable transportation costs. The price tends to be higher for delivery locations that are comparatively far from the main source of the commodity.

4.5.2.5 Daily Price Movement Limits

The daily price movement limits of the underlying asset can be set by the exchange, which puts bounds on the maximum price change allowed per day.

The contract is known as ‘limit down’ when the price goes down by an amount equal to the daily price limit. On the other hand, if it goes up by the limit, it is said to be ‘limit up’. Hence, the movement of the price limit means a move in either direction

equal to the daily price limit. On the limit up or the limit down of the contract, the exchange can stop the trading of a futures contract for the day. Though, in some cases, Exchange can change the limit if they feel necessary.

4.5.2.6 Position Limit

The maximum number of futures contracts that a speculator can hold is known as a position limit. Some exchanges also confine the members to the number of futures contracts. But, this limit is not applicable for to the bonafide hedgers. The main aim of this limit is to provide protection from the speculators to the market from excessive trading.

4.5.3 Clearing House

Every futures exchange has an associated Clearing House for the smooth functioning of the futures trading in the futures market. The Clearing House works as an intermediary or middleman in futures contracts. If the brokers are not clearing house members themselves, then they have to do their business through a member of the Clearing House.

4.5.4 Operation of Margin

Besides the Clearing House, there are some other safeguards for futures contracts like requirement for margin and daily settlement. A margin is a fund, which is deposited by the investor who enters into a futures contract with the broker. The main purpose of this margin is to provide a financial assurance that the investors will perform their contract obligations. The margins may vary from contract to contract and even broker to broker because the exchanges set minimum margins but the brokers may require larger margins if they are worried about investor's financial situations because they are finally responsible for their clients' losses.

Three types of margins are present i.e. initial margin, maintenance margin and variation margin.

The original amount that must be deposited into account to establish futures position is called initial margin. This varies from stock to stock. Initial Margin is set by the exchange so that the exchange can cover losses at the adverse condition. This margin is almost equal to the maximum daily price variation allowed by the exchange for that

underlying asset. It may be 5 percent or less of the value of the underlying asset for maximum futures contracts. After finishing of all the obligations, which are related with an investor's futures condition, the amount of initial margin is returned to trader.

The minimum amount, which must remain in a margin account, is called the maintenance margin. It is usually about 75 percent of the initial margin.

The additional amount, which has to be deposited by the trader with the broker to bring the balance of the margin account to the initial margin level is called variation margin.

4.5.5 Margins and Marking-to-Market (Daily Settlement)

All the transactions are settled on daily basis in the futures market. Hence the method of daily settlement in the futures market is called marking-to-market. The main aim of this system is that the futures contracts should be daily marked or settled and not at the end of its life. The gain or loss of the trader's is added or subtract, every day, the margin on the case may be. Thus, a futures contract is closed out and rewritten at a new price every day.

4.5.6 Clearing Margin and Clearing House

It is important for the trader to maintain a margin account with a broker; a member of the clearing is also needed to maintain a margin account with the clearinghouse. This is called clearing margin. The Brokers who are not the member of the clearinghouse must maintain a margin account with a member of clearinghouse.

4.5.7 Closing a Future Position (Settlement)

There are four ways to close the futures position, namely, physical delivery, cash settlement, offsetting and exchange of future for physicals (EFP).

4.6 Derivatives Products Traded at BSE

First time, with the introduction of "Equity derivatives" (Index Futures Sensex), the BSE started derivatives trading on June 9, 2000. Further, it launched different products like index options, stock options, single stock futures, weekly options, Chota (Mini) Sensex, Currency futures, US dollar-rupee future. The table no.4.1 summarily specifies the derivative products and their date of introductions of BSE.

Table 4.1: Derivatives Products Traded at BSE

S. No.	Introduction Date	Derivative Product
1	9th June 2000	Equity derivatives (Index futures - Sensex)
2	1st June 2001	Index options launched (Index options –Sensex)
3	9th July 2001	Stock options launched (Stock option on 109 stocks)
4	9th Nov. 2002	Stock futures launched (Stock futures on 109 Stocks)
5	1st Jan. 2008	Chota (mini) Sensex Futures
6	1st Oct. 2008	Currency derivative introduced (currency futures on US Dollar)
7	28th Nov 2013	Launch of Currency Derivatives (BSE CDX)
8	28th Jan 2014	Launch of Interest Rate Futures (BSE –IRF)

Source: Researcher's own compilation through BSE official website

4.7 Derivatives Products Traded at NSE

On June 12, 2000, the NSE commenced derivatives trading with the introduction of "Index Futures (S&P CNX Nifty). Further, it introduced different products like 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, CNX 100 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, S&P CNX Nifty futures on CME, European style stock options, Currency options on USD-INR, 91 days GOI T.B. futures, and derivative a global indices and infrastructures indices etc. Table No. 4.2 describes the types of derivative product traded at NSE and their date of commencement at NSE.

Table: 4.2 Derivatives Products Traded at NSE.

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

Source: Researcher's own compilation through BSE official website (www.nseindia.com).

4.8 Growth of Indian Derivatives Market

The two main Indian markets i.e. NSE and BSE have shown an outstanding growth both in terms of volumes and numbers of traded contracts. In India, derivatives market started with the inception of equity derivative market, which has recorded an explosive growth and is expected to carry on the same in the years to come. Only NSE has 99% account of the derivatives trading in Indian markets. Derivatives have become very popular in a very short span of time.

If we compare the growth of the business of NSE and BSE derivatives segment in terms of number of contracts traded and volumes in all product through table no. 4.3 to 4.6, 4.8, 4.9, 4.11, it shows that the NSE traded 911118963 total contracts whose total turnover is Rs. 26444804.86 cr. in the year 2013-14 in futures and options segment. In currency segment 548848391 total contracts were traded whose total value is 3294408.65 Crore in the same year while in Interest Rate 12 futures contract were traded whose total value was 0.12 Crore in 2012-13.

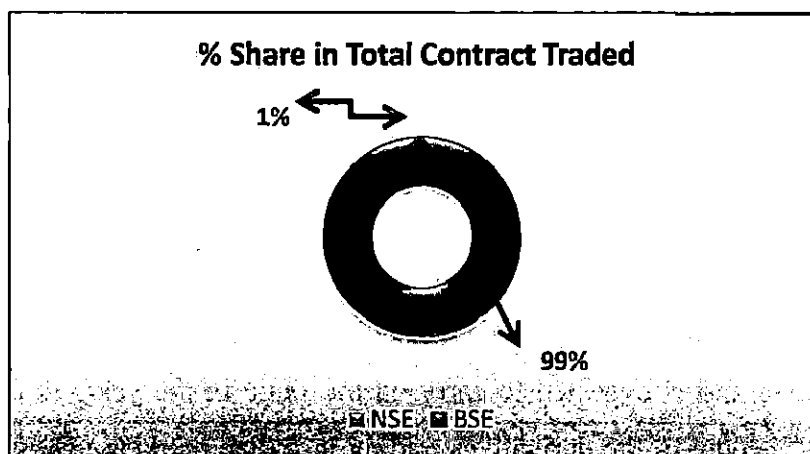
On the other hand, total numbers of contract traded by BSE were 7503405 whose total turnover was Rs. 19421854.8 Cr. in the year 2013-14 for all segments. On the basis of statistical data we can say that the performance of BSE is not cheering both in terms of volumes and numbers of contracts traded in all product categories. Table No.4.13 to 4.18 summarily, the updated figures since 2000-01 to 2013-14 describe the evolution of derivatives market with the help of contracts traded, total volumes, open interest and average daily turnover in all segments at BSE.

Table-4.3: Break Down of Contract Traded by Region in 2013-14

	No. of Contract Traded	% Share in total	Total Turnover (Rs. in Crore)	% Share in total
NSE	911118963	99.18	26444804.86	57.66
BSE	7503405	0.82	19421854.8	42.34
Total	918622368	100	45866659.66	100

Source: Researcher's own compilation through www.nseindia.com

Chart-4.1: Break Down of Contract Traded by Region in 2013-2014.



Source: Through table 4.3

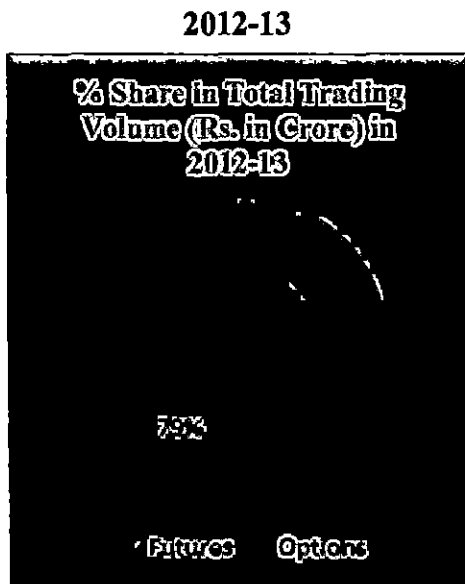
Table 4.3 and Chart-4.1 shows the recent position of NSE (National Stock Exchange) and BSE (Bombay Stock Exchange) in derivatives market in India. The NSE controls 99% derivatives market with the 911118963 contracts traded in 2013-14 whose value is 26444804.86 while BSE share is only 1% with the contract traded 7503405 in same year, which shows that the NSE is in dominating position while BSE position is negligible in all segment of derivatives market in India.

Table-4.4: Break Down of Volume by Product in 2012-13 & 2013-14

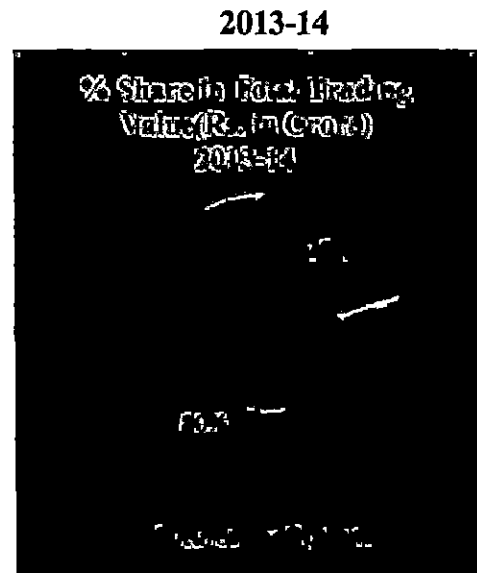
	2012-13		2013-14	
Product	Total Trading Value (Rs. in Crore)	% Share in Total	Total Trading Value (Rs. in Crore)	% Share in Total
Futures	6751003	21.41	5379426	20.34
Options	24782001	78.59	21065378	79.66
Total	31533004	100	26444805	100

Source: Researcher's own compilation through NSE

Chart-4.2: Break Down of Trading Volume by Product



Source: Through Table 4.4



Source: Through Table 4.4

Table 4.4 and Chart4.2 explain that the options capture 79% and 80% market by trading value, Rs. 24782001, 21065378 Crore during 2012-13 & 2013-14, while futures hold only 21% and 20% share in F & O segment with the value Rs. 6751003 and 5379426 Crore in the same years which shows that the investors are interested to invest in options as compared to futures. The main reason for this attraction towards options is that there is no obligation to pay.

Table-4.5: Business Growth of Futures & Options Segment at NSE Since 2000.

	Futures		Stock Futures		Index Options		Stock Options		Total
	Turnover (Rs. In Cr.)	No. of contracts	Turnover (Rs. In Cr.)	No. of contracts	Turnover (Rs. In Cr.)	No. of contracts	Turnover (Rs. In Cr.)	No. of contracts	
0	2365	-	-	-	-	-	-	-	90580
8	21483	1957856	51515	175900	3765	1037529	25163		4196873
3	43952	10676843	286533	442241	9246	3523062	100131		16768909
8	554446	32368842	1305939	1732414	52816	5583071	217207		56886776
9	772147	47043066	1484056	3293558	121943	5045112	168836		77017185
6	1513755	80905493	2791697	12935116	338469	5240776	180253		157619271
4	2539574	104955401	3830967	25157438	791906	5283310	193795		216883573
9	3820667.3	203587952	7548563.23	55366038	1362110.88	9460631	359136.55		425013200
3	3570111.4	221577980	3479642.12	212088444	3731501.84	13295970	229226.81		657390497
9	3934388.7	145591240	5195246.64	341379523	8027964.2	14016270	506065.18		679293922
3	4356754.5	186041459	5495756.7	650638557	18365365.8	32508393	1030344.2		1034212062
0	3,577,998	158,344,617	4,074,671	864017736	22720031.64	36494371	977031		1,205,045,464
5	2,527,131	147,711,691	4,223,872	820877149	22781574	66778193	2000427		1,131,467,418
2	2176314.26	116676854	3203112.18	663033020	19462635.85	55871737	1602742.62		911118963

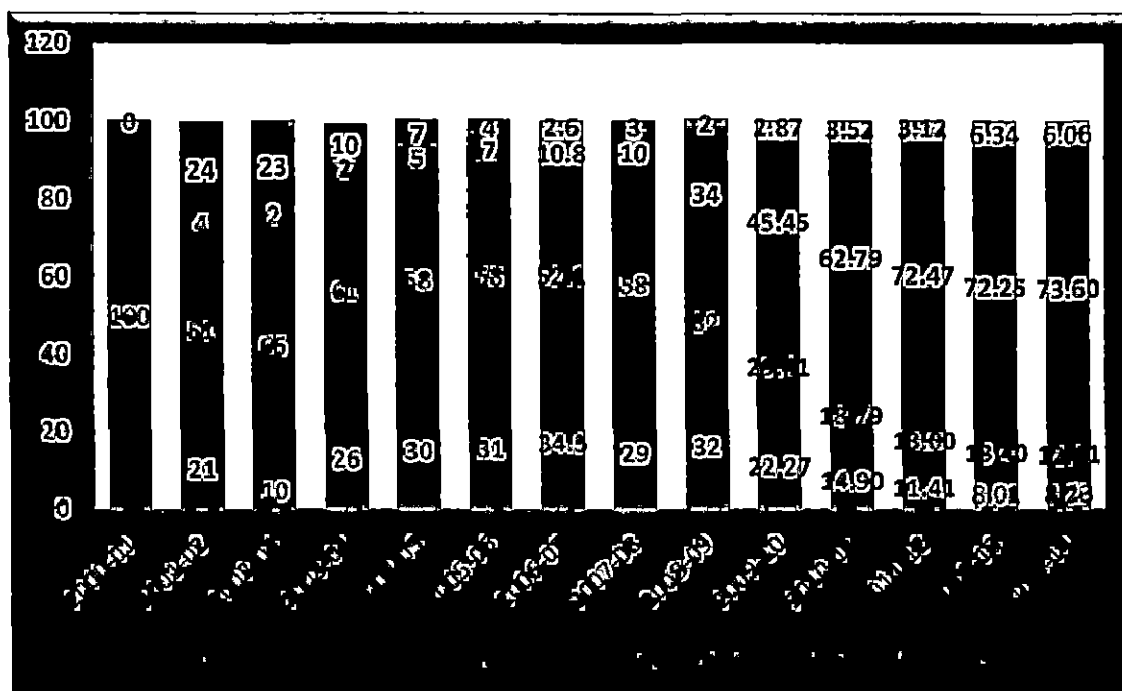
Compilation through www.nseindia.com

Table 4.6: Product-wise % share in Total Turnover since 2000 at F & O Segment of NSE

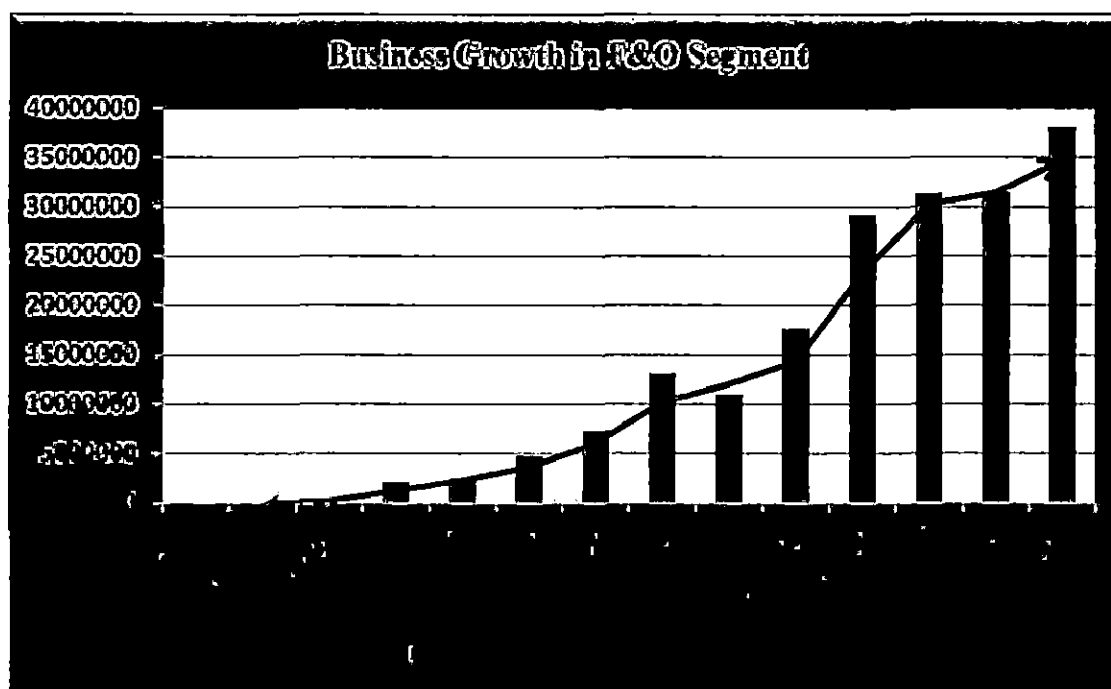
	100	NA	NA	NA
	21	51	4	24
	10	65	2	23
	26	61	2	10
	30	58	5	7
	31	58	7	4
	34.5	52.1	10.8	2.6
	29	58	10	3
	32	32	34	2
	22.27	29.41	45.45	2.87
	14.90	18.79	62.79	3.52
	11.41	13.00	72.47	3.12
	8.01	13.40	72.25	6.34
	8.23	12.11	73.60	6.06

Source: Researcher's own compilation through www.nseindia.com

Chart- 4.3: Evolution of Volume Break Down Since 2000 at F&O Segment of NSE



Source: Researcher's own Compilation through Table 4.6

Chart-4.4: Business Growth in F&O Segment at NSE Since 2000

Source: Researcher's own compilation through table 4.5

Table-4.7: Records Achieved in the F&O Segment (NSE): 2012-13

Product	Traded Value (Rs in Crore)	Date
Index Futures	29,261	28-Feb-13
Stock Futures	48,473	28-Feb-13
Index Options	308,254	28-Feb-13
Stock Options	23,263	11-Jan-13
Total F&O Traded Value	402,091	28-Feb-13

Source: Author's own compilation through www.nseindia.com

With the help of Table 4.5, 4.6, 4.7 and Chart 4.3 & 4.4 the author has tried to show the evolution of equity derivatives since 2000. It shows that from the beginning, futures market was very popular but since 2008-09 the downfall of futures products, (index futures and stock futures) started and till 2013-14 it reached at the bottom while on the other hand options was not very popular in the beginning but after financial crisis it became very popular among investors. Table 4.5, 4.6, 4.7 and Chart 4.3 & 4.4 explain the history of development of futures and options through contract traded, trading volume, Average daily trading and % share in Total.

Futures market grew drastically since 2000 and it reached at the peak in 2007-08 with 87% market share. After 2007-08, its downfall was started. The market share of futures reached at 20% till 2013-14, on the other hand the growth of options was low at the beginning. It was 28% in 2001 and after that the trend graph was down continuously. In 2007-08 the lowest point noted was 13%, but since 2008 it grew fast and now it has touched its peak, which is 80% during 2013-14. The Options is not only recorded its growth in Indian market but also it is very popular in global market.

Table-4.7 shows that on 28th Feb., 2012-13, the Futures & Options segment achieved record with the traded value Rs. 402,091 Crore.

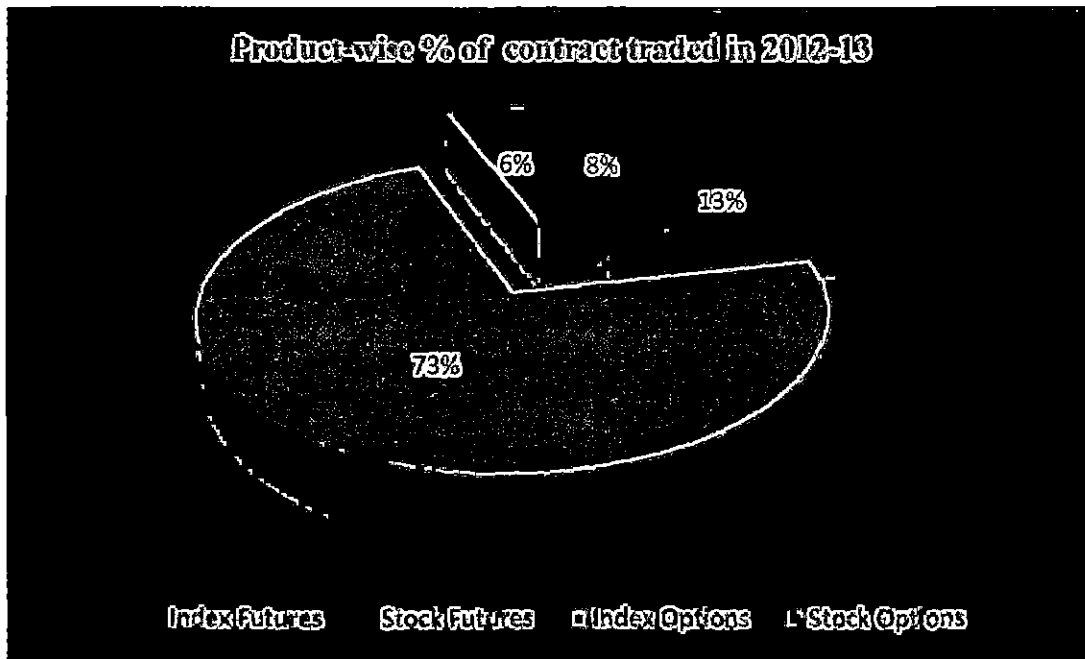
Table 4.8: Product wise % of Contract Traded in F&O Segment of NSE During 2012-2014.

Product	Contract Traded	% of Total Contract Traded	Contract Traded	% of Total Contract Traded
Index Futures	96100385	8.50	75537352	8.29
Stock Futures	147,711,691	13.05	116676854	12.81
Index Options	820877149	72.55	663033020	72.77
Stock Options	66778193	5.90	55871737	6.13
Total Contract Traded	1131467418	100	911118963	100

Source: Researcher's own compilation through www.nseindia.com

Table-4.8 explained with the help of Chart-4.5 & 4.6 that the total number of contract traded decreased by 19.47% with the comparison of 2012-13 contracts traded in F&O segment of NSE of 911118963 contracts traded during 2013-14. Out of total contracts traded, 72.77% of the contracts were traded on Index options followed by Stock Futures on which 12.81 of the contracts were traded. No. of contract traded on Index futures was 8.29% while 6.13% of the total contracts were traded on Stock Options.

Chart 4.5: Product-wise % of Contract Traded at F&O Segment at NSE in 2012-13



Source: Through table 4.8

Chart-4.6: Product-wise % of Contract Traded at F&O Segment at NSE in 2013-14.



Source: Through Table 4.8

Table-4.9: Business Growth of Currency Derivatives Segment at NSE

Month/Year	No. of Trading Days	No. of Contracts Traded	Trading Value (Rs. in Cr)	Average Daily Trading Value (Rs. in Cr)
2008-09	139	32,672,768	162,272	1,167
2009-10	240	378,606,983	1,782,608	394,907
2010-11	249	749,602,075	3,449,788	772,629
2011-12	240	973,344,132	4,674,990	19,479
2012-13	245	959,243,448	5,274,465	21,528
2013-14		47,83,01,579	1,62,272.43	1,167.43

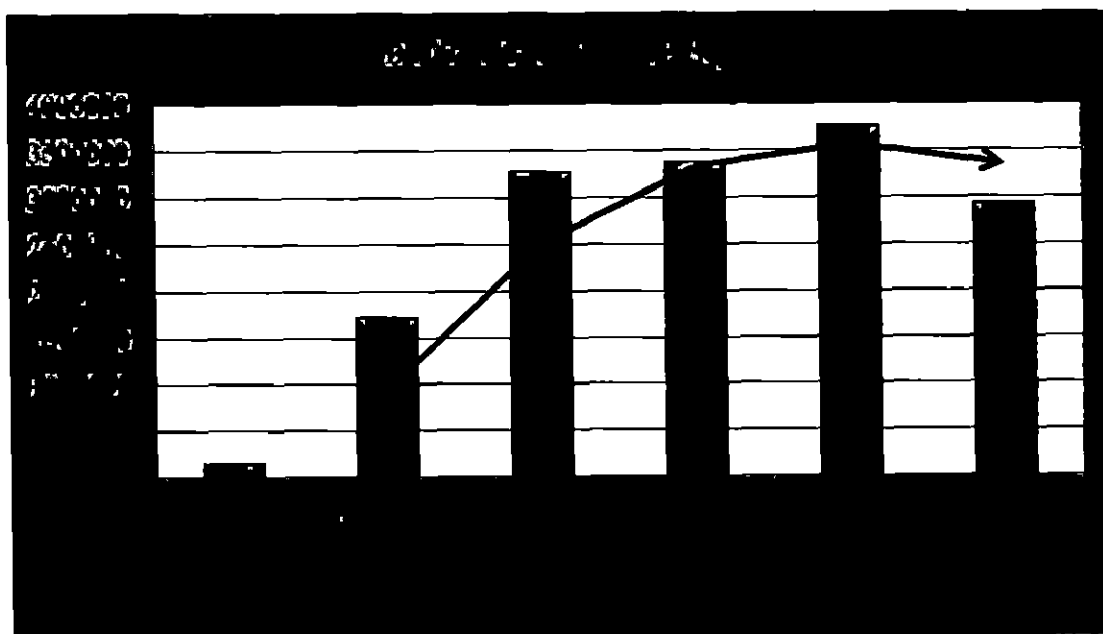
Source: Researcher's compiled through NSE official website www.nseindia.com

Note: Includes turnover details for August 29, 2008- the first day of trading of Currency futures at NSE. Currency Options were introduced at NSE w.e.f. October 29, 2010.

Table 4.10: Records Achieved in the Currency Futures & Options Segment from the Date of Inception till 31 March 2013

Record number of trades	227,905	28-Feb-13
Record number of contracts	11,121,509	27-Jul-11
Record Daily Notional Turnover (Rs. in Cr)	49,795.79	27-Jul-11

Source: Researcher's own Compilation through www.nseindia.com

Chart-4.7: Business Growth in Currency Derivatives Segment at NSE

Source: Researcher's own compilation through Table 4.9

Table 4.9, 4.10 and Chart 4.7 explain the growth of currency derivatives segment at NSE since its inception. During 2009-10 the trading value of currency derivatives was Rs. 1,782,608 in Crore and in 2012-13 it reached at Rs. 5,274,465 Crore. On 27th July 2011, it made the record no. of contracts traded and daily notional turnover values that was 11,121,509 and Rs. 4979579 Crore during 2013-14 the growth of currency derivatives segment was down with the trading value of Rs. 3294408.6 Crore.

Table- 4.11: Business Growth of Interest Rate Futures

Month/ Year	No. of trading days	No. of Contracts Traded	Trading Value (Rs. in Cr)	Average Daily Trading Value (Rs. in Cr)	Open Interest at the end	
					No. of Contracts	Trading Value (Rs. in Cr)
2009-10	140	160,894	2,975.00	21.25	758	14.15
2010-11	249	3,348	61.90	0.25	1	0.02
2011-12	240	215,200	3,959.21	16.50	0	0.00
2012-13	244	12	0.22	0.00	0	0.00

Source: Researcher's own compilation through www.nseindia.com.

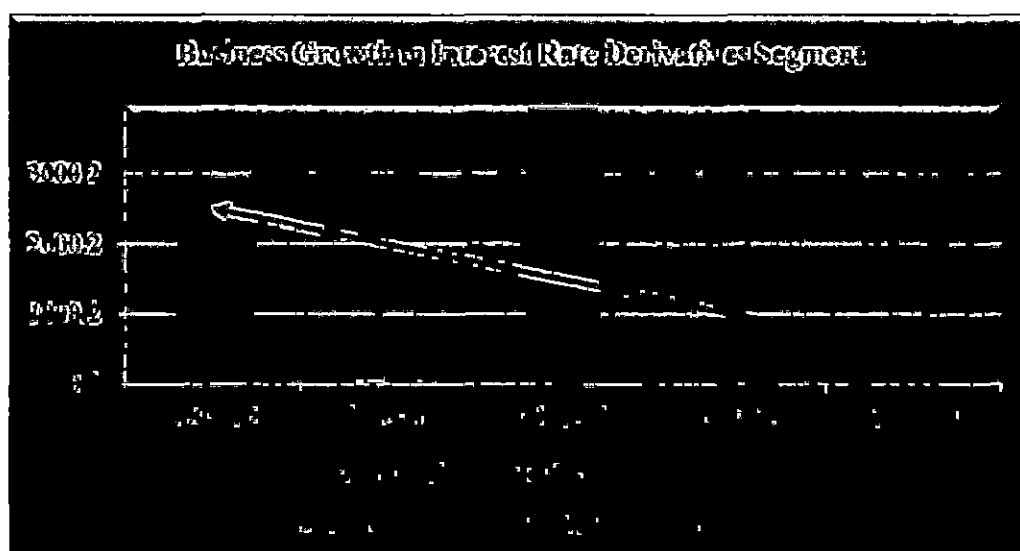
Note: Trading in Interest Rate Futures on Currency Derivatives Segment was introduced on August 31, 2009

Table 4.12: Records Achieved in the Interest Rate Futures from the Date of Inception till 31 March 2013

Record number of trades	1,475	31-Aug-09
Record number of contracts	39,755	4-Jul-11
Record Daily Notional Turnover (Rs. in Cr)	731.24	4-Jul-11

Source: Researcher's own compilation through www.nseindia.com

Chart-4.8: Business Growth in Interest Rate Derivatives Segment at NSE



Source: Author's own compilation through table 4.11

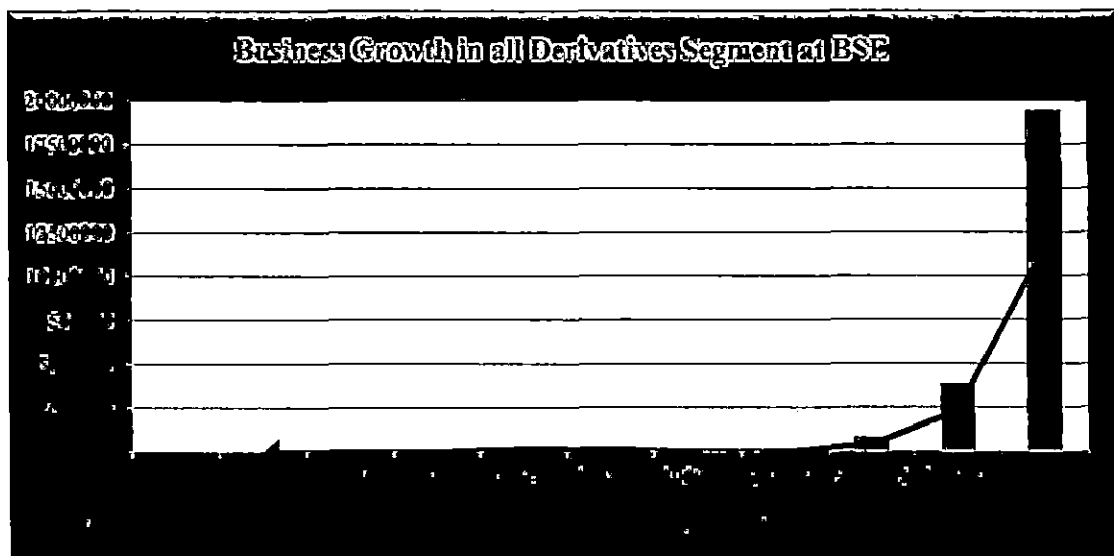
Table 4.11, 4.12 and Chart 4.8 shows the growth of Interest Rate Derivatives Segment at NSE. Interest Rate derivatives traded with good opening in 2009-10 but as the time passed the growth rate became very low. During 2011-12 it was at its peak with the contract traded 215200 and trading value Rs. 3959.21 Crore. But in 2012-13 it dropped down drastically. Only 12 contracts were traded with the value of Rs. 0.22 Crore.

Table 4.13: Business Growth at BSE in all Segments

2003-04	143224	5021.81	81.00	62
2004-05	531719	16112.32	77.09	209
2005-06	203	8.78	0.14	61
2006-07	1781220	59006.62	259.94	227
2007-08	7453371	242308.41	965.37	251
2008-09	496502	11774.83	48.46	243
2009-10	9028	234.06	1.04	224
2010-11	5623	154.33	0.61	255
2011-12	32222825	808475.99	3246.89	249
2012-13	150068157	3884370.96	30828.34	241
2013-14	7503405	19421854.8	308283.4	247

Source: Researcher's own compilation through BSE official website.

Chart-4.9: Growth in All Derivatives Segment at BSE



Source: Author's own compilation through Table -4.13

Table 4.14: Product wise Turnover of Futures at BSE

7 Year	Index Futures Turnover (Rs in Cr)	Equity Futures Turnover (Rs. in Cr)	Trading Days
2003-04	3082.63	1680.34	62
2004-05	13599.66	212.85	209
2005-06	5.00	0.49	61
2006-07	55490.86	3515.50	227
2007-08	234660.16	7609.24	251
2008-09	11757.22	8.49	243
2009-10	96.00	0.30	224
2010-11	154.08	0.00	255
2011-12	178448.83	10215.70	249
2012-13	194188.65	21390.60	241
2013-14	215647.78	32560.80	247

Source: Researcher's own compilation through BSE official website.

Table 4.15: Product wise Turnover of Options at BSE

Year	Index Option Call Turnover (Rs. in Cr)	Index Option Put Turnover (Rs. in Cr)	Equity Option Call Turnover (Rs. in Cr)	Equity Option Put Turnover (Rs. in Cr)	Trading Days
2003-04	0.00	0.00	139.07	119.77	62
2004-05	1470.61	826.62	2.08	0.50	209
2005-06	3.20	0.00	0.09	0.00	61
2006-07	0.06	0.00	0.16	0.04	227
2007-08	31.00	7.66	0.21	0.14	251
2008-09	6.11	3.01	0.00	0.00	243
2009-10	137.76	0.00	0.00	0.00	224
2010-11	0.00	0.25	0.00	0.00	255
2011-12	200089.57	418252.79	1277.27	191.82	249
2012-13	1967091.23	1812758.37	1367.87	245.32	241
2013-14	17680872.23	9063791.85	1487.98	298.54	247

Source: Researcher's own compilation through BSE official website.

Table 4.16: No. of Contract Traded at BSE in Future Segment

Year	Index Futures Contracts	Equity Futures Contracts	Trading Days
2003-04	103777	33437	62
2004-05	44630	6725	209
2005-06	89	12	61
2006-07	1638779	142433	227
2007-08	7157078	295117	251
2008-09	495830	299	243
2009-10	3744	8	224
2010-11	5613	0	255
2011-12	7073334	326342	249
2012-13	14146668	652684	241
2013-14	42440004	1958052	247

Source: Researcher's own compilation through BSE official website.

Table 4.17: No. of Contract Traded at BSE in Options Segment

Year	Index Options Call Contracts	Index Options Put Contracts	Equity Options Call Contracts	Equity Options Put Contracts	Trading Days
2003-04	0	0	3466	2544	62
2004-05	48065	27210	72	17	209
2005-06	100	0	2	0	61
2006-07	2	0	5	1	227
2007-08	951	210	9	6	251
2008-09	251	122	0	0	243
2009-10	5276	0	0	0	224
2010-11	0	10	0	0	255
2011-12	7206514	17569130	39848	7657	249
2012-13	14413028	143044388	3498	15314	241
2013-14	28387467	278474689	5425	39584	247

Source: Researcher's own compilation through BSE official website.

Table 4.18: Average Daily Transaction at BSE in All Segments

Year	Total Contracts	Total Turnover (Rs. Cr.)	Average Daily Turnover (Rs. Cr.)	Trading Days
2003-04	143224	5021.81	81.00	62
2004-05	531719	16112.32	77.09	209
2005-06	203	8.78	0.14	61
2006-07	1781220	59006.62	259.94	227
2007-08	7453371	242308.41	965.37	251
2008-09	496502	11774.83	48.46	243
2009-10	9028	234.06	1.04	224
2010-11	5623	154.33	0.61	255
2011-12	32222825	808475.99	3246.89	249
2012-13	300067817	6884370.9	60828.43	241
2013-14	698497492	127464748	128344.60	247

Source: Researcher's own compilation through BSE official website.

Statistical Data (Information)

This section provides the information about Indian derivatives markets name: product wise turnover of F & O segment, Currency Derivatives segment & Interest Rate Derivatives Segment at NSE, number of contracts traded at NSE in F & O segment, Currency Derivatives segment & Interest Rate Derivatives Segment, Average daily transactions at NSE in F& O segment, Currency Derivatives segment & Interest Rate Derivatives Segment.

Product wise turnover of futures & Options at BSE, number of contract traded at BSE in future & option segment and average daily transaction at BSE in all segments.

After analyzing such data given in table no. 4.3 to 4.18 and Chart 4.3, 4.4, 4.7, 4.8 and 4.9, we can say that they are explosive growth. Industry analyst realized that the derivatives market has not yet realized its full potential in terms of growth and trading. It is pointed out that the equity derivative market on the NSE and BSE has been limited to only our product Index-futures, index options and individual stock futures and options, which is limited to certain select stock only. Though, presently NSE and BSE has introduced some other products in their derivative segment but still it is not in comparison to the depth and variety of product existing across many developed capital markets.

4.9 Status of Indian Derivatives Market vis-à-vis Global Derivatives Market

The derivatives segment has developed in the recent years in considerable way both internationally as well as in the Indian capital market. The statistical information disclosed by the “World Federation of Exchanges (WFE)” website to compare the trading data of 14 selected stock exchanges of America (four exchanges), Asia Pacific (seven exchanges) and EAME (three exchanges) region which are summarily denoted in Table No. 4.19 to Table No. 4.22 show the position of Indian Derivatives Market in Global Derivatives market. These tables show that the Indian segment has developed amazingly as compared to the global segment. The notional value of NSE options is 4665 billion USD and numbers of contracts are 874 million and the notional value at NSE single stock futures is 8091 billion USD and numbers of contracts are 166 million in 2013, which are so more in comparison to 2003. These figures are displaying more than six to seven times increase over the 10 years period. In case of BSE, the notional value of BSE options is 1269 billion USD and numbers of contracts are 250 million. Globally the growth in BSE is low, while Korea, NYSE Euronext (Europe), Hong Kong, Tokyo are rising fast in global level, other exchanges are also following at global level which are shown in followings tables:

Table 4.19: Top 10 Exchanges in the World by Number of Stock Index Options Contracts Traded in 2013

NSE India	930	13%	4665	13%	1728	-14%	9	-19%	238267	23%	41	9%
Korea Exchange	580	-63%	240	-12%	656	-1%	NA	NA	174152	-19%	240	-12%
Eurex	317	-17%	13758	5%	27 976	-10%	1092	0%	11424	4%	225	-31%
BSE Limited	250	7%	1269	9%	0	-9%	33.52	NA	5017	-9%	NA	NA
CBOE	230	19%	37335	39%	12296	18%	2238	55%	6942	43%	419	11%
TAIFEX	110	1%	1486	8%	902	4%	13	13%	40	12%	7	-28%
CME Group	92	55%	10229	66%	2 835	30%	351	50%	NA	NA	NA	NA
JPX Group (Osaka SE)	57	17%	NA	NA	3212	1%	NA	NA	6974	45%	103	68%
Tel-Aviv SE	48	-16%	1672	-1%	456	41%	17	70%	15927	-17%	15	-12%
Moscow Exchange	42	25%	118	20%	1384	128%	NA	NA	NA	NA	NA	NA
Others	121	-1%	6396	17%	9981	0%	206	37%	6 396	-2%	67	-1%
Total	2778	-24%	77168	28%	61427	0%	3960	34%	77168	0%	1117	-1%

Source: Researcher's own compilation through World Federation of Exchange www.world-exchange.org

In 2013, 21.5 billion Exchange Traded Derivatives (ETD) contracts from which 9.3 billion Options and 12.1 billion Futures were traded on exchanges worldwide (against 21.1 billion in 2012). This modest increase (+2%) reverses the 2012 trend, when the total number of derivatives traded on exchange decreased sharply (-15%).

Table 4.19 explain that the most active derivatives contract in the world became the CNX Nifty Options, traded on NSE India, with 874 million contracts traded in 2013. It got 1st rank in the world for stock index options contract traded with the notional value 4665 billion USD, while BSE (Bombay Stock Exchange of India) got 4th rank in the world with the contract traded 250 million and notional value 1269 billion USD. When looking at individual exchange performance (excluding KRX), the four largest exchanges had contrasted performance: + 19% for CBOE, +13% for NSE, +7% for BSE.

Table-4.20: Top 10 Exchanges in the World by Number of Single Stock Futures Contracts Traded in 2013

Moscow Exchange	303	25%	106	17%	3303	119%	NA	NA	NA	NA
Eurex	179	-8%	758	48%	2894	-41%	12	16%	37	6%
National Stock Exchange of India	166	9%	809	2%	1076	-2%	6	-12%	133 356	11%
NYSE Life (European markets)	120	-51%	429	-40%	3138	-36%	NA	NA	8	-32%
Korea Exchange	96	-5%	57	6%	816	5%	1	1063%	9088	30%
Johannesburg Stock Exchange	26	-9%	17	-12%	1923	-34%	1	-45%	201	13%
MEFF	15	-29%	15	-29%	962	-26%	1	-17%	30	-23%
Thailand Futures Exchange	8	288%	NA	NA	282	83%	NA	NA	878	150%
One Chicago	7	31%	NA	NA	0	NA	0	NA	0	NA
Athens Exchange	7	-49%	2	-8%	147	-57%	17	26%	466	-15%
Others	19	20%	54	34%	1656	138%	6	729%	54	105%
Total	947	-8%	2 247	0%	16197	-13%	44	25%	2 247	14%

Source: Researcher's own compilation through World Federation of Exchange www.world-exchange.org

In International market, Single Stock Future volumes declined below 1 billion contracts traded in 2012 due to an 8% decrease in volumes. National Stock Exchange of India was the third significant exchange with a strong growth (9%) This allowed it to reach 166 million contracts traded and to become the highly active exchange in single stock futures globally. National Stock Exchange of India traded contracts with

the notional value of 809 billion USD. Table-4.20 shows the position of Indian Stock exchange in top 10 exchanges by number of single stock futures contract traded in 2013 worldwide.

Table 4.21: Top 10 Exchanges in the World by Number of Stock Index Futures Contracts Traded in 2013

Rank	Exchange	Number of Contracts Traded		Notional Value (USD bn.)		Open Interest (COI) (contracts)		Notional COI (USD bn.)		YoY % Change	
		2012	% Chg	2013	% Chg	2012	% Chg	2013	% Chg	2012	% Chg
1	CME Group	574	2%	46 792	15%	3 784	6%	394	29%	NA	NA
2	Eurex	327	-14%	18 711	-1%	3 625	3%	188	26%	41766	-16%
3	Moscow Exchange	268	-17%	751	-21%	868	32%	NA	NA	NA	NA
4	Japan Exchange Group, Inc. (Osaka SE)	265	77%	7497	102%	1 094	3%	NA	NA	24033	145%
5	China Financial Futures Exchange	193	84%	22908	90%	120	8%	14	3%	NA	NA
6	National Stock Exchange of India	102	-9%	502	-5%	486	20%	2	15%	42061	-7%
7	Singapore Exchange	100	49%	NA	NA	1 218	12%	NA	NA	NA	NA
8	NYSE Life (European markets)	82	-2%	6285	13%	1 260	-1%	NA	NA	33386	-10%
9	BM&FBOVESPA	74	15%	851	-16%	258	-6%	5	-31%	22 894	29%
10	Hong Kong Exchanges and Clearing	51	9%	4666	16%	335	1%	32	-8%	NA	NA
	Others	297	-7%	17708	4%	3 177	0%	210	-20%	17 708	16%
	Total	2333	4%	NA	21%	16224	5%	845	9%	NA	NA

Source: Researcher's own compilation through World Federation of Exchange www.world-exchange.org

At international market, Stock Index Futures grew by 4% in 2013. In Asian exchanges, National Stock Exchange of India had impressive growth in 2013. The volumes on NSE continued to grow. Its futures contract reached 102 million contracts traded with the notional value of 502 billion USD in this year. In 2013, on the basis of contract traded of Stock Index Futures, India got 6th position among top ten exchanges in the world. Table 4.21 shows the actual picture of National Stock Exchange of India in the world.

Table-4.22: Top 10 Exchanges in the World by Number of Single Stock Options Contracts Traded in 2013.

BM & FBOVESPA	909	-2%	984	-25%	15315	41%	11	-3%	26 807	-14%	21	-27%
NASDAQ OMX (US markets)	704	9%	NA	NA	NA	NA	NA	NA	65 276	32%	248	-18%
NYSE Euronext (US markets)	584	-2%	NA	NA	NA	NA	NA	NA	50 761	-6%	104	-35%
Chicago Board Options Exchange	434	-12%	3 619	-32%	195405	15%	702	38%	41 329	-14%	89	-36%
International Securities Exchange	334	-4%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Eurex	203	-6%	785	5%	34 506	5%	142	29%	2 336	2%	34	-3%
Australian Securities Exchange	124	-11%	283	-12%	10 068	-18%	NA	NA	1 658	-12%	11	3%
NYSE Liffe (European markets)	99	-13%	343	1%	15 719	-2%	NA	NA	2 411	-6%	17	-30%
National Stock Exchange of India	82	43%	411	33%	175	-1%	1	-10%	58 841	45%	8	36%
Boston Options Exchange	63	-33%	NA	NA	NA	NA	NA	NA	NA	NA	0	-100%
Others	248	-3%	446	10%	27 58	-2%	50	77%	2 171	-15%	8	-21%
Total	3 785	-3%	6 870	-22%	298746	10%	905	38%	251 588	8%	541	-27%

Source: Researcher's own compilation through World Federation of Exchange www.world-exchange.org

Table 4.22 explains that globally, Single Stock Options remain the most traded contracts representing 18% of all the derivatives contracts traded. The total number of single stock options traded declined to 3.7 billion in 2013 due to a 2.6% fall compared to 2012. India got 9th rank among top ten exchanges by no. of Single Stock options contract traded world-wide. India traded 82 million contracts with the notional value of 411 billion USD in 2013.

4.10 Conclusion

Financial derivatives have an enormously important place among the entire financial instrument because of innovation and reforms. Derivatives are hedging instrument, which give opportunity to shift the risk from one to another. With the Introduction of equity derivatives in India, derivatives market has become highly encouraging and successful. The development of derivatives in the previous year has exceeded the growth of its counterpart globally.

The Turnover value of Index futures on the NSE increased from 2365 Crore Rs. in 2000- 2001 to 2176314.26 Crore Rs. in 2013-2014, Stock Futures increased from 51515 Crore Rs. in 2001- 2002 to 3203112.18 Crore Rs. in 2013-2014, Notional turnover value of Index Option increased from 3765 Crore Rs. in 2001-2002 to 19462635.85 Crore Rs. and Notional turnover value of Index Option increased from 25163 Crore Rs. in 2001-2002 to 1602742.62 Crore Rs. in 2013-14.

Hence, India is one of the most successful emerging country in terms of vibrant market for exchange traded derivatives. The equity derivatives market is playing an important role in determining 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 development of financial derivatives globally also in India. Hence, we can say that there is a big contribution of derivative in financial system.