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Indian Equity Derivative Market

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Abstract:
Financial derivatives are used by a number of entities such as corporations, commercial banks, institutional investors and individuals to reduce risk or "lay off" various risks or for speculating purpose. Though financial derivative market in India is not a very old one, inspite of that the country has emerged as a large and active derivative market in the global scenario. National Stock Exchange (NSE) of India ranked after CME group and Eurex in the world in 2012. The findings of this study indicate the ever increasing demand of Indian financial derivative market in comparison to Indian cash market. It necessarily leads to the fact that the usages of financial derivatives as risk management tool is also increasing.

1. Introduction

Capital market is one of the driving forces of an economy and at present derivative market is the most active part of Indian capital market. Trading volume of equity derivatives is, on an average, more than a half time than that of trading volume of the cash equity market. National Stock Exchange (NSE) has undertaken enormous efforts in upgrading the Indian Capital, and within a short span of time it has succeeded, to a far extent, in achieving it.

Indian derivative capital market consists of different types of derivative products. Derivative instruments are mainly classified into two categories: Commodity derivatives and financial derivatives. In case of commodity derivatives, underlying asset can be commodities like wheat, gold, silver etc., whereas in case of financial derivatives underlying assets are stocks, currencies, bonds and other interest rates bearing securities etc. Since, the scope of our study is limited to only financial derivative. so we will confine our discussion to financial derivative instruments only.

This paper is divided into three sections. In the first part we would talk about concept, classification, uses etc of derivative financial instruments. The second part would present evolution and development of derivative financial market. In the third and central part of the paper, we would analyse the growth of Indian derivative financial market.

2. Methodology of the study

The proposed study is a descriptive one. For the purpose of the study secondary data are used. As NSE is a leading stock exchange in India having full transparency and appropriate regulatory framework, we have considered the secondary data obtained from National Stock exchange. The data are taken from stock exchange for the year 2001 to 2014 for interpretation. The collected data has been examined with the help of appropriate tables, graphs and charts to draw the inference..

3. Derivative financial instruments

3.1. Meaning of Derivative Financial Instruments:

A derivative is an instrument whose value keeps on changing with the change in value of the underlying. Derivative contracts get their name from the fact that they are "derived from" some other "underlying". The change of price of underlying changes the value of derivatives. That underlying can be an agricultural product like potato, coffee, tea; stock or share of a company like ONGC, Infosys, ACC cement ; Stock indexes like Standard & Poor, Sensex, Nifty etc; Currency like Dollar, Pound, Euro; rate of interest etc.

Under IAS (International Accounting Standard) 32, a financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity. This financial instrument may be a primary instrument (such as shares and bonds) or a derivative instrument (such as options, forwards, and swaps).

A derivative instrument (or simply 'derivative') is an instrument which derives its value from the value of some other financial instrument or variable. Its fair value changes with the changes of hedged item (Bontas, & Aurora, 2009). Usually, derivatives are contracts to buy or sell the underlying asset at future date, with the quantity, quality, price and other specifications defined today. More definitions are prescribed by different accounting standards

IFRS: A derivative is a financial instrument:

- Whose value changes in response to a specified variable or underlying rate (for example, interest rate);
- That requires no or little investment;
- That is settled at a future date.

US GAAP: Sets out similar requirements, except that the terms of the derivative contract should require or permit net settlement. There are some derivatives, such as option and forward agreements to buy unlisted equity instruments, that fall in within the IFRS definition, not the US GAAP definition, because of the net settlement.

Indian GAAP: The guidance note on Accounting for Equity Index Options and Equity Stock Options uses an inclusive definition and states derivatives include, (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 derives its value from the prices, or an index of prices, of underlying securities (Price water house coopers, 2010)

The International Monetary Fund defines derivatives as "financial instruments that are linked to a specific financial instrument or indicator or commodity and through which specific risks can be traded in financial markets in their own right. The value of a financial derivative derives from the price of an underlying item, such as an asset or index. Unlike debt securities, no principal is advanced to be repaid and no investment income accrues."

3.2. Derivative market landscape

The range of derivative instrument is too wide to classify. It may be Over-the-counter or Exchanges Traded, again it may be Plain vanilla or exotic derivative.

3.2.1. Over-the-counter & Exchanges Traded Derivatives

An over-the-counter derivative is one which trades under private negotiation. On the other Exchange Traded Derivatives are those derivative instruments that are traded via specialized derivative exchanges or other exchanges. A derivative exchange acts as an intermediary to all related transactions, and takes initial margin from both sides of the trade and act as a guarantor.

3.2.2. Plain vanilla derivative and exotic derivative

Derivative instruments are broadly classified as plain vanilla derivative and exotic derivative products. A Plain vanilla derivative refers to a simple derivative financial instrument having standard features. Examples of such kind of derivatives are future, option and swap. On the other, exotic derivative is a derivative instrument which has more complex features than commonly traded 'Plain vanilla derivative' product. A plain vanilla derivative may also convert in to an exotic derivative due to change of its features and vice versa.

However, at basic level, derivative financial instruments can be classified into four basic kinds of derivatives: forwards, futures, options and swap.

- **Forwards**- A contract between two parties giving right and obligating each other to exchange a particular good or instrument at today's pre- agreed price Where payment takes place at a specific time in the future. Now a day's forwards contracts are mostly used in the foreign exchange market. The forward contract is an over the counter agreement.
- **Futures-**In case of future contract two parties decide to purchase or sell an asset at a given time in the future at a given price. It is similar to a forward contract. A future contract differs from a forward contract where, a future contract is a standardized contract written by a clearing house that operates an exchange whereas the forward contract is a non-standardized contract written by the parties themselves.

The major types of futures are stock index futures, interest rate futures, and currency futures.

- **Options**- A contract that gives the holder the right but not the obligation, to buy (in case of a call option) or sell (in the case of a put option) an asset. In such type of contract the buyer has the right and the seller has the obligation.

It is of two different kinds such as calls and puts. A call option gives a buyer/holder right but not the obligation to buy the underlying on or before specified time at a specified price and quantity. Similarly, the buyer of a Put option has the right to sell a certain quantity of the underlying variable at a specified price on or prior to a given date.

- **Swaps-**These are private contracts between two entities to exchange cash flows on or before a specified future date following a pre-decided formula. They are somewhat like forward contracts' portfolios. Swaps are also of two types such as interest rate swaps and currency swaps.
- **Interest rate swaps-**in this case, only interest related cash flows can be exchanged between the entities in one currency.
- **Currency swaps-I**n this kind of swapping, principal and interest can be exchanged from one currency to any other form of currency.

3.3. Why Derivatives?

James Morgan (Journalist) nicely captured the ambiguous role of derivatives in an article of Financial Times "a derivative is like a razor. You can use it to shave yourself….. or you can use it to commit suicide".

Srivastava, Yadav, Jain (2008) conducted a survey on Derivative trading in Indian Stock Market. The survey revealed that derivative securities have definitely penetrated into the Indian stock market and investors are using these securities for different purposes, namely risk management, profit enhancement, speculation and arbitrage.

Financial derivatives have changed the world of finance through the creation of innovative ways to comprehend, measure, and manage risks. The derivatives market performs a number of economic functions:

- **Risk management**: The most important purpose of the derivative market is to manage the risk. Epstein & Jermakowicz, (2010) opine derivative financial instruments are used most typically as a tool to assist in the management of some category of risk, such as possible unfavorable movements in share prices, interest rate variations, currency fluctuations and commodity price volatility.
- **Market efficiency:** Efficient markets are fair and competitive and do not allow investors to make risk free profits. Through self-correcting mechanism, Derivatives improve the efficiency of the markets.
- **Price discovery:** Derivatives provide valuable information about the prices and expected price fluctuations of the underlying assets.
- **Price Stabilization:** Derivatives control fluctuation of prices of underlying thereby increasing the price stability of the market.
- **Catalyze entrepreneurial activity:** Derivatives accelerate the growth of entrepreneurs who become able to start new business and introduce new products.
- **Derivatives increase the volume traded in markets** as participation of risk avoider increases gradually.
- **Increase savings and investment**: According to Dodd (2000) derivatives facilitated the growth in private capital flows by unbundling the risks associated with investment vehicles such as bank loans, stocks, bonds and direct physical investment, and then reallocating the risks more efficiently in the long run.

3.4. Participants of Derivatives Market:

Different categories of investors participate with different objective in Indian derivative market. In India a part of the investors uses the derivatives market for risk management, some uses as investment strategy where as other for speculation purposes. Although speculation in derivative market in India is strictly prohibited.

- **Hedgers:** The use of derivatives to reduce or avoid risk is called hedging and the person who is involved with hedging is called hedger. Hedgers participate in the derivative market with an opposite position to lock the price in the derivative market.
- **Speculators**: **B**ased on anticipated potential movement of the underlying stock price, a speculator accepts large calculated risk. They enjoy the profit when the price of the underlying moves as per their expectation and suffer loss for the movement in opposite direction.
- **Arbitrageurs**: Capital market is not always perfect. Arbitrageurs are those who exploit these imperfections and inefficiencies for their interest. They take positions in financial markets to earn riskless or low-risk profits. The arbitrageurs take short and long positions in the same or different contracts at the same time to create a position which can generate a riskless profit.

4. Evolution and development of derivative financial market

Shapiro (2000) opines all markets face different kind of risks. The derivative is one of the categories of risk management tools. As this consciousness about risk management capacity for derivative grew, the market for derivatives developed.

The initial decade of unprecedented volatility in the international financial environment occurred in the 1970_s –starting with the breakdown of the Brettonwoods system on 15th August 1971 and ending with the well-known Saturday night massacre of Federal Reserve on 6th October, 1979.During the Brettonwoods era there was relative currency and interest rate stability. The breakdown of the Brettonwoods system in August in The initial decade of unprecedented volatility in the international financial environment occurred in the 1970_s –starting with the breakdown of the Brettonwoods system on 15th August 1971 and ending with the well-known Saturday night massacre of Federal Reserve on 6th October, 1979.During the Brettonwoods era there was relative currency and interest rate stability. The breakdown of the Brettonwoods system in August in 1971, with US president Nixon's announcement that the dollar was no longer convertible to gold (at the rate of $35 to an ounce),resulted in inflation, volatile interest rates and currency turmoil. This state of affairs heralded the origin of Derivatives. (*Bhaskar & Mahapatra,2003*).

The first modern organized future exchange began in 1710 at the Dojima Rice Exchange in Osaka, Japan. In the year 1877, the London Metal Market and Exchange Company (London Metal Exchange) was founded. Chicago Board of Trade (CBOT), established in 1848, is one of the world's oldest organized futures and option derivative exchange in the world. Trading was originally in forward contracts and later on in 1865 standardized future contracts were introduced. In the year 1918, first rival futures exchange Chicago Mercantile Exchange was established. Then, almost 65 years later, in 1973 first Chicago Boards Option Exchange was established. Now a days, there are many derivative exchanges all over the world trading various types of derivative instruments. The rapid growth of derivative market across the globe is exhibited through Table 1:

Instrument / location	Turnover 2012	Turnover 2013	% Changes
FUTURES **All markets**	1,162,129.8	1,415,720.4	21.82
Interest rate	1,026,140.8	1,244,487.6	21.28
Currency	31,966.7	32,871.1	02.83
Equity index	104,022.2	138,361.7	33.01
North America	619,882.7	720,709.9	16.27
Interest rate	553,546.2	644,886.6	16.50
Currency	25,486.7	25,590.9	00.41
Equity index	40,849.8	50,232.4	22.97
Europe	415,148.6	540,929.3	30.30
Interest rate	387,887.8	509,976.7	31.48
Currency	438.9	519.0	18.25
Equity index	26,822.0	30,433.6	13.47
Asia and Pacific	100,568.3	126,558.4	25.84
Interest rate	64,084.9	68,249.8	06.50
Currency	1,560.2	2,056.7	31.82
Equity index	34,923.3	56,251.8	61.07
Other Markets	26,530.2	27,522.9	03.74
Interest rate	20,622.0	21,374.5	03.65
Currency	4,481.0	4,704.5	04.99
Equity index	1,427.2	1,443.9	01.17
OPTIONS **All markets**	410,650.5	470,562.9	14.59
Interest rate	308,602.9	354,366.3	14.83
Currency	2,382.7	3,392.5	42.38
Equity index	99,664.9	112,804.2	13.18
North America	194,103.6	227,065.8	16.98

Interest rate	154,328.8	164,604.6	06.66
Currency	1,513.5	2,052.5	35.61
Equity index	38,261.4	60,408.6	57.88
Europe	157,287.5	200,040.6	27.18
Interest rate	144,243.9	184,579.4	27.96
Currency	4.3	6.4	48.84
Equity index	13,039.2	15,454.7	18.52
Asia and Pacific	49,827.6	37,596.6	-24.55
Interest rate	3,182.8	2,144.1	-32.63
Currency	237.6	354.1	49.03
Equity index	46,407.3	35,098.4	-24.37
Other Markets	9,431.7	5,860.0	-37.87
Interest rate	6,847.3	3,038.1	-55.63
Currency	627.3	979.5	56.15
Equity index	1,957.1	1,842.4	-05.86

Table 1: Derivative financial instruments traded on organized exchanges in the World:

By instrument and location

Notional principal in billions of US dollars

Source: BIS Quarterly Review, March 2014

BIS Quarterly Review report shows a growth rate of 21.82% and 14.59% for future and option derivatives respectively in the current year 2013-14. India's experience with the launch of financial derivatives market has been extremely positive; within a few years of its inception. NSE(National Stock Exchange) stood out as one of the most high up exchanges among all emerging markets and the BSE (Bombay Stock Exchange) also has positioned in the list of top 20 stock exchanges of the world. Table 2 shows the fact.

Rank	Exchange	Jan-Dec 2011 Volume	Jan-Dec 2012 Volume	Jan-Dec 2013 Volume	Annual % Change
1	CME Group	3,386,986,678	2,890,036,506	3,161,476,638	9.2%
2	Intercontinental Exchange **	381,097,787	473,895,526	2,807,970,132	14.7%
3	Eurex *	2,821,502,018	2,291,465,606	2,190,548,148	-4.4%
4	National Stock Exchange of India	2,200,366,650	2,010,493,487	2,135,637,457	6.2%
5	BM&FBovespa	1,500,444,003	1,635,957,604	1,603,600,651	-2.0%
6	CBOE Holdings *	1,216,922,087	1,134,316,703	1,187,642,669	4.7%
7	Nasdaq OMX *	1,295,641,151	1,115,529,138	1,142,955,206	2.5%
8	Moscow Exchange	1,026,920,603	1,061,835,904	1,134,477,258	6.8%
9	Korea Exchange	3,930,658,944	1,835,617,727	820,664,621	-55.3%
10	Multi Commodity Exchange	1,196,322,051	959,613,240	794,001,650	-17.3%

	of India				
11	Dalian Commodity Exchange	289,047,000	633,042,976	700,500,777	10.7%
12	Shanghai Futures Exchange	308,239,140	365,329,379	642,473,980	75.9%
13	Zhengzhou Commodity Exchange	406,390,664	347,091,533	525,299,023	51.3%
14	Japan Exchange Group	NA	234,258,426	366,145,920	56.3%
15	Hong Kong Exchanges & Clearing	140,448,579	119,802,638	301,128,507	7.7%
16	ASX Group	225,353,623	259,966,030	261,790,908	0.7%
17	BSE	30,54,793	243,757,257	254,845,929	4.5%
18	JSE South Africa	152,441,879	158,996,880	254,514,098	60.2%
19	China Financial Futures Exchange	50,413,544	105,061,825	193,549,311	84.2%
20	TMX Group *	201,660,687	209,352,769	155,753,473	-25.6%

Table 2: Top 20 Derivatives Exchanges in the world
Ranked by number of contracts traded and/or cleared
Source: Futures Industry Annual Volume Survey, March 2012, March 2013 & March 2014

Vashishtha & Kumar (2010) commented that India is one of the most successful developing countries in terms of a vibrant market for exchange-traded derivatives. This reiterates the strengths of the modern development of India's securities markets, which are based on nationwide market access, anonymous safe and secure electronic trading. No doubt the derivative market has started its journey with the commodity product through Bombay Cotton Exchange Ltd. which was first established in 1893. But as the global financial markets are now highly integrated, India could not be an exception but necessarily integrated itself with the world of financial derivatives. The necessity and requirements, financial de-regulation and the technological developments accelerate the process of emerging new financial derivative instruments (Table No-3) in our country.

Sl. No.	Date	Events
1.	1956	Securities Contracts (Regulation) Act
2.	1992	Securities and Exchange Board of India Act
3.	14th Dec. 1995	NSE asked SEBI for permission to trade index futures
4.	1 June 1999	Interest rate swaps / Forward Rate Agreements allowed at BSE
5.	25 May2000	SEBI permitted NSE and BSE for index future trading
6.	9 Jun 2000	Trading of BSE Sensex future commenced at BSE
7.	12 Jun 2000	Trading of Nifty future commenced at NSE
8.	25 Sep 2000	Nifty Futures trading commenced at Singapore Exchange
9.	1June 2001	Index Options launched at BSE
10.	04 Jun 2001	Index options introduced at NSE
11.	02 July 2001	Stock options (on 135 securities) introduced at NSE
12.	09July 2001	Stock options launched at BSE
13.	01November 2001	Stock futures launched at BSE
14.	09 Nov 2001	Stock futures (on 135 securities) introduced at NSE
15.	24 Jun 2003	Interest rate futures introduced at NSE
16.	29 Aug 2008	Currency Future trading commences on the NSE
17.	1 October 2008	Currency Derivatives Introduced at BSE
18.	31 Aug 2009	Interest rate Derivatives trading commences on the NSE
19.	Feb 1010	Launch of Currency Futures on additional currency pairs at NSE
20.	4 October 2010	EUREX - SENSEX Futures launch at NSE
21.	28 Oct 2010	Introduction of European style stock options at NSE
22.	29 Oct 2010	Introduction of Currency Options at NSE

24.	July 2011	Commencement of 91 day GOI trading Bill futures by NSE
25.	Aug. 2011	Launch of derivative on Global Indices at NSE
26.	Sep. 2011	Launch of derivative on CNX PSE & CNX infrastructure Indices at NSE
27.	30th March 2012	BSE launched trading in BRICSMART indices derivatives
28.	28 November 2013	Launch of Currency Derivatives (BSE CDX)
29.	28 January 2014	Launch of Interest Rate Futures (BSE –IRF)

Table 3: Financial Derivatives in India: A Chronology of important events
Source: Compiled from BSE & NSE website

5. Analysis of growth of Indian derivative financial market

Of the two major stock exchanges in India BSE and NSE trading in F&O is thin at BSE.

Moreover, archival data on F&O trading details are available only from March 3, 2008 onwards on BSE website. Due to such restrictions, the present research study focuses on NSE as an indicator of the health of Indian equity and derivative market. The following graph shows the position of NSE and BSE in terms of number of contracts traded and/or cleared in the world.

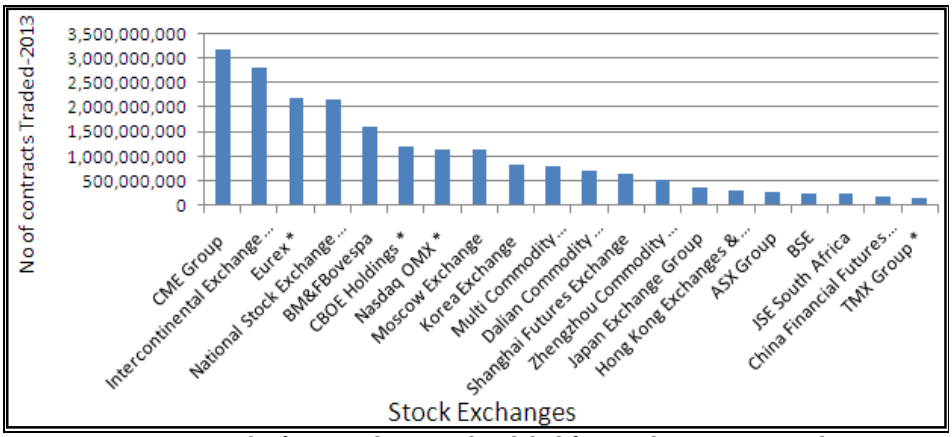

Figure 1: Rank of NSE and BSE in the global financial Derivative Market
Source: Futures Industry Annual Volume Survey, March 2012, March 2013 & March 2014

- **Interpretation**: It can be deciphered from the graph that NSE positioned only after CME Group, Intercontinental Exchange and Eurex in the calendar year 2013 in terms of volume of Derivative contracts traded and/ or cleared. And out of these top 20 Derivatives exchanges in the world, BSE holds seventeenth positioned in terms of volume of Derivative contracts. The rank of both the derivative exchanges indicates the growth of Derivative market of our country.

6. Comparative study between Cash and Derivative market (F & O segment) of NSE

A comparative view of the changing scenario of the cash market in the total market volume as evidenced from column 7 of Table 4 as well as Figure 2, discerns an interesting phenomenon.

Financial Year	Cash Market Turnover (Rs. In Core)	% of Change in Cash Market	Derivative Market Turnover (Rs. In Core)	% of Change in Derivative Market	Total Turnover (Rs. In Core)	% of Cash Market to Total Market	% of Derivative Market to Total Market
2013-14	28,08,488	3.70	3,82,11,408	21.18	4,10,19,896	6.85	93.15
2012-13	27,08,279	-3.65	3,15,33,004	0.58	3,42,41,283	7.91	92.09
2011-12	28,10,893	-21.43	3,13,49,732	7.19	3,41,60,625	8.23	91.77
2010-11	35,77,412	-13.55	2,92,48,221	65.58	3,28,25,633	10.90	89.10
2009-10	41,38,024	50.36	1,76,63,665	60.42	2,18,01,689	18.98	81.02
2008-09	27,52,023	-22.50	1,10,10,482	-15.89	1,37,62,505	20.00	80.00
2007-08	35,51,038	82.55	1,30,90,478	77.95	1,66,41,516	21.34	78.66
2006-07	19,45,285	23.94	73,56,242	52.49	93,01,527	20.91	79.09
2005-06	15,69,556	37.67	48,24,174	89.41	63,93,730	24.55	75.45
2004-05	11,40,071	3.69	25,46,982	19.54	36,87,053	30.92	69.08

2003-04	10,99,535	77.92	21,30,610	384.38	32,30,145	34.04	65.96
2002-03	6,17,984	20.50	4,39,862	331.55	10,57,846	58.42	41.58
2001-02	5,12,866	-5.94	1,01,926	4209.76	6,14,792	83.42	16.58
2000-01	12,64,337	-	2,365	-	12,66,702	99.81	00.19

Table 4: Trading volume of Cash market & Derivative Market
Source: Compiled from data available from nse website

- **Interpretation**: To be precise, equity derivatives hold less than 1% of the total trading volume of NSE up to May 2001. Derivatives' share remained below 10% up to August 2001. In other words, the cash market kept its monopoly in the first year of the introduction of derivatives but the monopoly shattered first in September 2001 when the share of cash market came down to 87% and that of derivative market worked out in double digit. The derivative market got further strength and its share overrun the cash market in February, 2003.

The derivative market has been sharing between 69% and 78% of the total turnover of market since November 2003. The market share of the cash market came down to as low as 20.27% in December 2006. The percentage of trading volume of derivative market to spot market went phenomenally up to 206.89 in November 2003, 359 in October 2005 and 415 in April 2006. The share of derivative market has remained above 325% throughout the year 2006. Today the contribution of these two markets has just reversed. In the year of inception of Derivatives, i.e., 2000-01, 99.81% was held by Cash market and only 0.19% was in the hands of derivative market. During the fourteenth year of Derivatives, the share of cash market is found to be only 6.85% and the lion's share 93.15% is held by derivative market.

From the above findings, it is inferred that the derivative market has been dominating the cash market in terms of trading volume since the year 2003-04 and the cash market has taken the back seat.

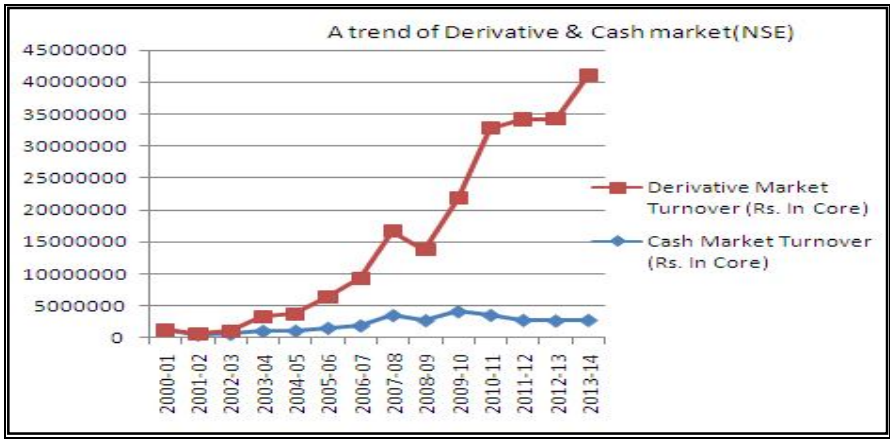

Figure 2: Trend of Derivative and Cash market

6.1. Business Growth of Futures and Options Segment of NSE

India's experience with the equity derivative market has been extremely encouraging. The turnover of equity derivative of NSE has surpassed the equity market turnover. The turnover of derivatives of NSE increased from 24 billion in 2000–2001 to ` 292,482 billion in 2010–2011, and reached 381,940 billion in 2013–2014. The average daily turnover in this segment of NSE was ` 1,522 billion in 2013–2014 compared to 1,152 billion in 2010–2011.

Financial Year	Index Future		Stock Futures		Index Option		Stock Options		Total Amount
	volume	%	Volume	%	Volume	%	Volume	%	
2001-02	21,482	21.1	51,516	50.5	3,766	3.7	25,163	24.7	1,01,927
2002-03	43,951	10.0	286,532	65.1	9,247	2.1	1,00,133	22.8	4,39,863
2003-04	5,54,462	26.0	13,05,949	10.0	52,823	2.5	2,17,212	10.2	21,30,446
2004-05	7,72,174	30.3	14,84,067	58.3	1,21,954	4.8	1,68,858	6.6	25,47,053
2005-06	15,13,791	31.4	27,91,721	57.9	3,38,469	7.0	1,80,270	3.7	48,24,251
2006-07	25,39,575	34.5	38,30,972	52.1	7,91,912	10.8	1,93,811	2.6	73,56,270
2007-08	38,20,667	29.2	75,48,563	57.7	13,62,111	10.4	3,59,136	2.7	1,30,90,477
2008-09	35,70,111	32.4	34,79,642	31.6	37,31,501	38.9	2,29,227	2.1	1,10,10,481
2009-10	39,34,389	22.3	51,95,247	29.4	80,27,965	45.4	5,06,065	2.9	1,76,63,666
2010-11	43,56,755	14.9	54,95,757	18.8	1,83,65,366	62.8	10,30,344	3.5	2,92,48,222
2011-12	35,77,998	11.4	40,74,671	13.0	2,27,20,032	72.5	9,77,031	3.1	3,13,49,732
2012-13	25,27,131	8.0	42,23,872	13.4	227,81,574	72.2	20,00,427	6.3	3,15,33,004
2013-14	30,85,192	8.1	49,04,014	12.8	276,99,223	72.5	25,05,582	6.6	3,81,94,011

Table 5: Growth of Equity Derivatives (NSE)
(All figures are 'Rs in crore')
Source: Compiled from data available from nse website

The graph (Figure 3) indicates that the Indian financial derivative market has a sharp trend in terms of its volume of transactions. The trend proves that use of derivative tools by the different stake holders have increased in our country.

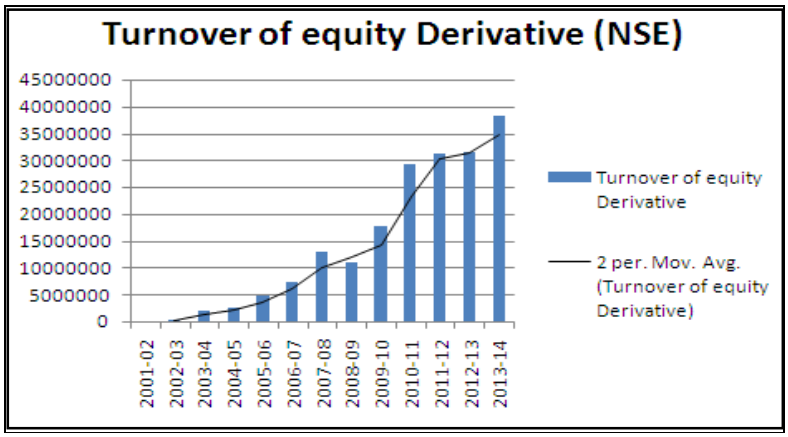

Figure 3: Trend of equity derivative

6.2. Index option and Equity derivatives

Out of the four equity derivatives, the use of index option is maximum in both the stock exchanges NSE and BSE. Puhan (2014) provides evidence that demand for equity index option has predictive power for future volatility beyond current and lagged volatility in publicly available data. The predictive power increases prior to macroeconomic announcements and exhibits a positive relation with investor uncertainty about macroeconomic news. In times of high volatility, the demand for straddle positions contains significantly more information and has an impact on option liquidity levels.

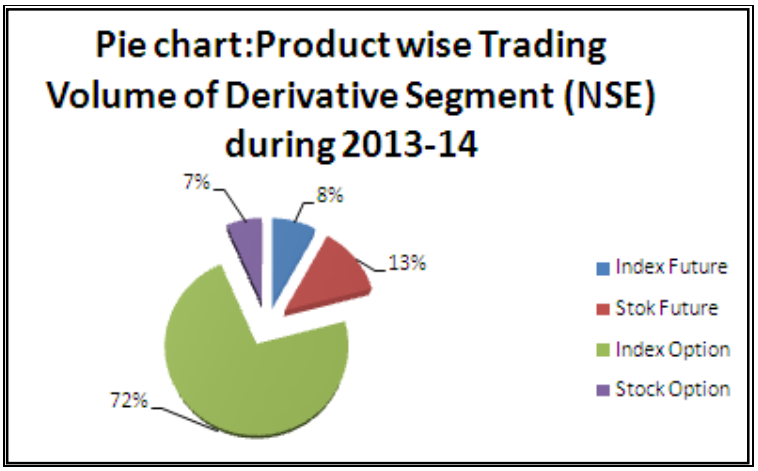

Figure 4: trading volume of equity derivatives (NSE)

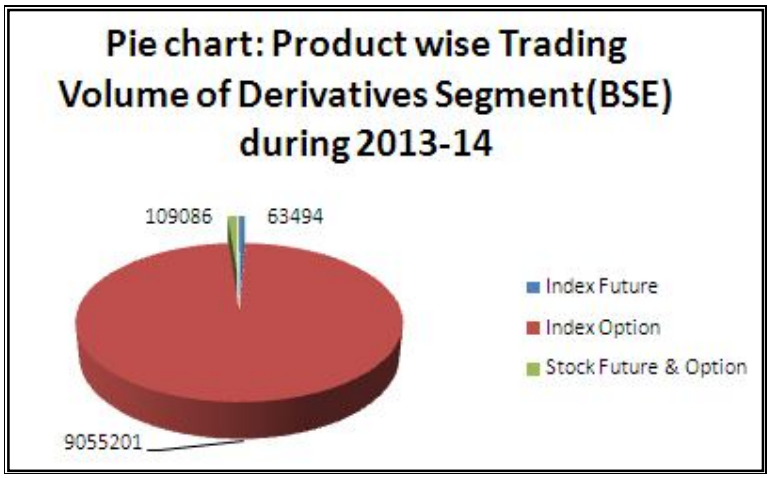

Figure 5: trading volume of equity derivatives (BSE)

7. Conclusion

The findings of this study show that the derivatives have become an integral part of the stock market as they contribute more than 90%(93.15% in 2013-14 in NSE) of the total volume as compared to less than 1% when they were first introduced in the Indian stock market. Hence, equity derivatives have started to play central role in the domestic capital market in our country and cash market has taken a back seat. It means that derivative attracts the users to participate in the derivative market instead of underlying cash market for superior investment instrument, managing risk or for speculative trading due to inherent leverage and lower transaction cost. Nevertheless, the study also indicates a reduction in compounded growth of trading volume of equity derivatives.

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