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Global Derivatives Market with Special Preference to Indian Derivatives Market

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Abstract

The subject matter of the study is related to the progression as well as the pattern of the stock index derivatives market in India in the last seven years. Firstly, it is to observe how much as well as in which way the market is flourished by the investors. 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. 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 contracts traded. The market turnover has grown from Rs.2365 Cr. in 2000-2001 to Rs. 55606453.39 Cr. in 2014-15. Within a short span of fourteen years, derivatives trading in India has surpassed cash segment in terms of turnover and number of traded contracts. The present study encompasses of global derivatives market with special preference to Indian derivatives market.

Keywords: *Derivatives, Stock Future, Index Future, Stock Option, Index Option.*

1. Introduction

The growth in financial markets, globalization of the major stock exchanges, increase in the number of players in the markets and the creation of new financial opportunities led to the creation of a wide array of instruments tailor made to manage the evolving risk-return profile. A derivative security is a financial contract whose value is derived from the value of something else, such as a stock price, a commodity price, an exchange rate, an interest rate, or even an index of prices The economic liberalization of the nineties laid down the foundation for the growth of capital markets in India, the adoption of market determined rate in 1993 and the policy that allowed full conversion of rupee on current account in 1994 were among some of the major steps that led to this rapid growth. In the exchange-traded market, the biggest success story has been derivatives on equity products. Index futures were introduced in June 2000, followed by index options in June 2001, and options and futures on individual securities in July 2001 and November 2001, respectively. As of 2005, the NSE trades futures and options on 118 individual stocks and 3 stock indices. Derivatives on stock indexes and individual stocks have grown rapidly since inception. In particular, single stock futures have become hugely popular; accounting for about half of NSE's traded value in October 2005. In fact, NSE has the highest volume (i.e. number of contracts traded) in the single stock futures globally, enabling it to rank 16 among world exchanges in the first half of 2005. Single stock options are less popular than futures. Index futures are increasingly popular, and accounted for close to 40% of traded value in October 2005. Derivatives are likely to grow even at a faster rate in future [1-5].

2. Review of Literature

Futures have been around in various guises for around 100 years according to Taylor (2006) and are originally based on agricultural commodities but are now of many different types. The first 'futures' contracts can be traced to the Yodoya rice market in

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Osaka, Japan around 1650. These were evidently standardized contracts, which made them much like today's futures. It was in the early 1970's that futures became respectable, with the opening of 'regulated exchanges' around the world. The two oldest exchanges are both American and both based in Chicago: The Chicago Mercantile Exchange (CME) and the Chicago Board of Trade (CBOT) is noted by McDonald (2005). A future contract is identical to a forward contract. The only difference is that the gains and/or losses on a future position are posted each day (Whaley 2006). Derivatives market in India had been flourishing since the 19th century, the Bombay Cotton Trade Association started futures trading in 1875.After the ban in 1952 the derivatives trading had to happen through informal channels until the early 2000's when the government lifted the ban on future commodities trading with the establishment of national electronic commodities exchanges. (Alaxender 2002). A forward is a contract to buy or sell an underlying asset at some pre-specified future date at a price agreed upon today as defined by Whaley (2006). No money changes hands until the expiration date, at which time the buyer pays the amount of cash specified in the contract and the seller delivers the underlying asset [6]. The nature of the distribution of price risks among contracting parties is not the same for all kinds of derivatives. For forwards, it is symmetric: the risk of loss for the one mirror the chance of profit for the other (McDonald 2005). An option, like the forward, is a contract to buy or sell an underlying asset at some pre-specified future date at a price agrees upon today. Unlike a forward, however, the buyer of the option has the right but not the obligation to buy or sell the underlying asset at the options expiration (Whaley 2006). The seller's obligation depends on whether or not the buyer chooses to exercise the option. The model most widely used in options pricing is the Black-Scholes approach. Swaps are custom-tailored to the needs of the counterparties (Hull 2005). If they wish, the potential counterparties can start with a blank sheet of paper and develop a contract that is completely dedicated to meeting their particular needs, thus, swap agreements are more likely to meet the specific needs of the counterparties than exchange-traded instruments. Over –the-counter (OTC) instrument consists of interest rate swaps, currency swaps and other options related derivative such as caps, collars, floors and swaptions. These investment vehicles are designed to hedge against the fluctuation in various markets Machiraju (2002). While they are enormously profitable, they also make trading more volatile.

3. Objective of the Study

The subject matter of the study is related to the progression as well as the pattern of the stock index derivatives market in India in the last fifteen years. The broad objectives are as follows:

- To find out the different types of stock index in India and to make a comparative analysis of these stock index.
- To show the status of Global derivatives market with special preference to Indian derivatives market.

4. Research Methodology

- Selecting Sensex (sensitivity index of 30 listed shares in Bombay Stock Exchange) and Nifty (sensitivity index of 50 listed shares in National Stock Exchange) as sample.
- Making a comparative analysis of the relevant aspects.

5. Findings

Growth of Turnover (Rs. in Cr) and No. Of Contracts (Index Future) Data's & Graph shown in Table 1 & Figure 1.

Index Futures: In our country (India) index futures were introduced in June 2000.In 2001-02 number of contracts were 1025588 and turnover (Rs. in crore) 21483 just after 2 years number of contracts were 17191668 and turnover (Rs. in crore) 554446 in 2003-04. Number of contracts were increased by nearly 17(16.763appx.) times and amount increased by nearly26 (25.81 approx) times only after 1 year in 2005-06 number of contracts were 58537886 and turnover (Rs. in crore) 1513755 so number of contracts increased by (58537886/ 17191668 = 3.41approx) 3.5 times and amount increased by

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(1513755/ 55446 = 2.73) 2.75times Compare with 2003-04. If we compare with 2001-02 then it increased by 958537866/ 1025588 = 57.7appx) 57 times and (1513755/21483=70.46) 70 times finally in 2014-15 no. of contracts reached to 129303044 and turnover to Rs. 4107215.2 crore i.e. from inception no. of contract increased by1428(1427.501appx) times and turnover increased by 1737(1736.66appx) times. So, we can say just after two years from introducing index futures was increased by 17&26 times and after 4 years it was increased by 57 & 7o times and after14 years it was increase by 1428 and 1737 times in no. of contracts and turnover respectively. Therefore, index futures are rapidly growing in our country. Growth of Turnover and No. of Contracts (Stock Future) Data's & Graph shown in Table 2 & Figure 2.

Table 1 Growth of Turnover and No. of Contracts (Index Future)

Year	Index Futures					
	No. of contracts			Turnover (Cr.)		
		Increase	% of Increase		Increase	% of Increase
2000-01	90580			2365		
2001-02	1025588	935008	1032.245529	21483	19118	808.372093
2002-03	2126763	1101175	107.3701135	43952	22469	104.5896756
2003-04	17191668	15064905	708.3490262	554446	510494	1161.480706
2004-05	21635449	4443781	25.84845752	772147	217701	39.26459926
2005-06	58537886	36902437	170.5646922	1513755	741608	96.04492409
2006-07	81487424	22949538	39.20458966	2539574	1025819	67.7665144
2007-08	156598579	75111155	92.17514963	3820667.27	1281093.27	50.44520341
2008-09	210428103	53829524	34.37420974	3570111.4	-250555.87	-6.557908666
2009-10	178306889	-32121214	-15.2646978	3934388.67	364277.27	10.2035267
2010-11	165023653	-13283236	-7.44964823	4356754.53	422365.86	10.73523476
2011-12	146188740	-18834913	-11.41346265	3577998.41	-778756.12	-17.87468435
2012-13	96100385	-50088355	-34.26279958	2527130.76	-1050867.65	-29.37026599
2013-14	105252983	9152598	9.523997224	3083103.23	555972.47	22.00014652
2014-15	129303044	24050061	22.84976664	4107215.2	1024111.97	33.21692119

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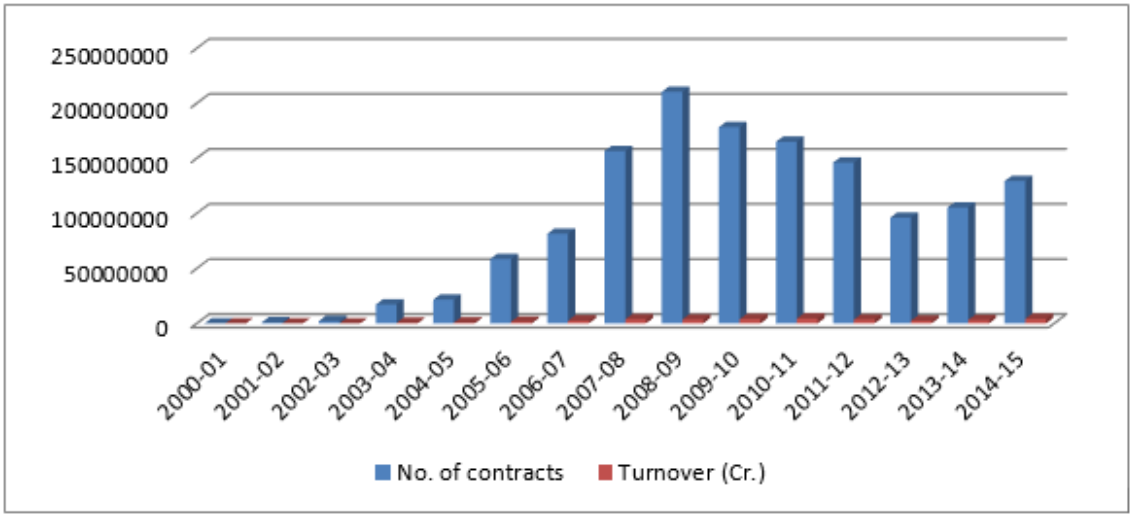

Figure1 Growth of Turnover (Rs. in Cr) and No. of Contracts (Index Future)

Table 2 Growth of Turnover and No. of Contracts (Stock Future)

Year	Stock Futures					
	No. of contracts			Turnover (Cr.)		
		Increase	% of Increase		Increase	% of Increase
2001-02	1957856			51515		
2002-03	10676843	8718987	445.333416	286533	**235018**	**456.21275**
2003-04	32368842	21691999	203.168661	1305939	**1019406**	**355.77263**
2004-05	47043066	14674224	45.3344114	1484056	**178117**	**13.638998**
2005-06	80905493	33862427	71.9817603	2791697	**1307641**	**88.112645**
2006-07	104955401	24049908	29.7259273	3830967	**1039270**	**37.227178**
2007-08	203587952	98632551	93.9756793	7548563.23	**3717596**	**97.040675**
2008-09	221577980	17990028	8.8364895	3479642.12	**-4068921**	**-53.903253**
2009-10	145591240	-75986740	-34.293453	5195246.64	**1715605**	**49.304051**
2010-11	186041459	40450219	27.7834154	5495756.7	**300510.1**	**5.7843271**
2011-12	158344617	-27696842	-14.887457	4074670.73	**-1421086**	**-25.857876**
2012-13	147711691	-10632926	-6.7150537	4223872.02	**149201.3**	**3.6616772**
2013-14	170414186	22702495	15.3694639	4949281.72	**725409.7**	**17.174045**
2014-15	237604741	67190555	39.4277945	8291766.27	**3342485**	**67.53474**

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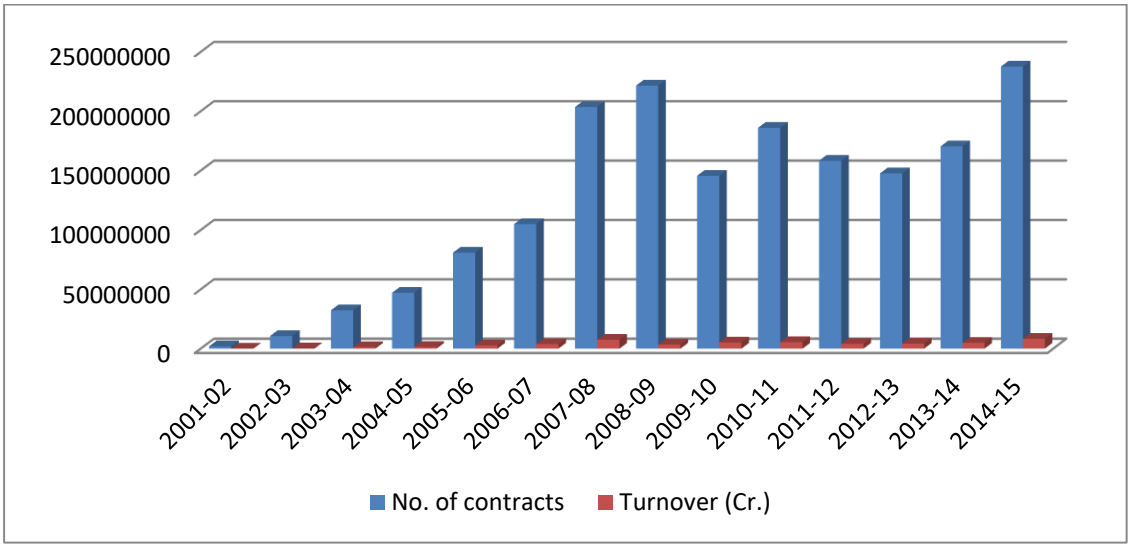

Figure 2 Growth of Turnover and No. of Contracts (Stock Future)

Table 3 Growth of Turnover and No. of Contracts (Index Option)

Year	Index Option					
	No. of contracts			Notional Turnover (Cr.)		
		Increase	% Of Increase		Increase	% Of Increase
2001-02	175900			3765		
2002-03	442241	266341	151.416146	9246	**5481**	**145.577689**
2003-04	1732414	1290173	291.735276	52816	**43570**	**471.230803**
2004-05	3293558	1561144	90.113795	121943	**69127**	**130.882687**
2005-06	12935116	9641558	292.739888	338469	**216526**	**177.563288**
2006-07	25157438	12222322	94.4894657	791906	**453437**	**133.967069**
2007-08	55366038	30208600	120.078205	1362111	**570204.9**	**72.0041116**
2008-09	212088444	156722406	283.065958	3731502	**2369391**	**173.949933**
2009-10	341379523	129291079	60.9609258	8027964	**4296462**	**115.140299**
2010-11	650638557	309259034	90.5909737	18365366	**10337402**	**128.76741**
2011-12	864017736	213379179	32.795348	22720032	**4354666**	**23.7112941**
2012-13	820877149	-43140587	-4.993021	22781574	**61542.5**	**0.2708733**
2013-14	928565175	107688026	13.1186532	27767341	**4985767**	**21.8850861**
2014-15	1378642863	450077688	48.4702313	39922663	**12155322**	**43.7756072**

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Stock Futures: In our country (India) stock futures were introduced in November 2001.In 2001-02 number of contracts were 1957856 and turnover (Rs in crore) 51515 just after 2-year number of contracts were 32368842 and turnover (Rs in crore) 1305939 in 2003-04. Number of contracts were increased by nearly 17(32368842/1957856=16.53 app.) times and amount increased by nearly 25(1305939/51515=25.35 approx) times only after year in 2005-06 number of contracts were 80905493 and turnover (Rs in crore) 2791697.So number of contracts increased by nearly 2(2791697/1305939=2.14) times compare with 2003-04.If we compare with 2001-02 then it increased by nearly 41 times (80905493/1957856=41.32 approx.) and (2791697/51515=54.19 approx) 54 times finally in 2014-15 no. of contracts reached to 237604741 and turnover to Rs. 8291766 crores i.e. from inception no. of contracts increased by121(121.359 appx) times and turnover increased by 161(160.958appx) times. So, we can say just after two years from introducing stock future it was increased by nearly 17&25 times and after 4 years it was increased by 41&54times and after 14 years it was increased by 121times and 161 times in number of contracts and turnover respectively [7]. Therefore, stock futures are rapidly growing in our country. Growth of Turnover and No. of Contracts (Index Option) Data & Graph shown in Table 3 & Figure 3**.**

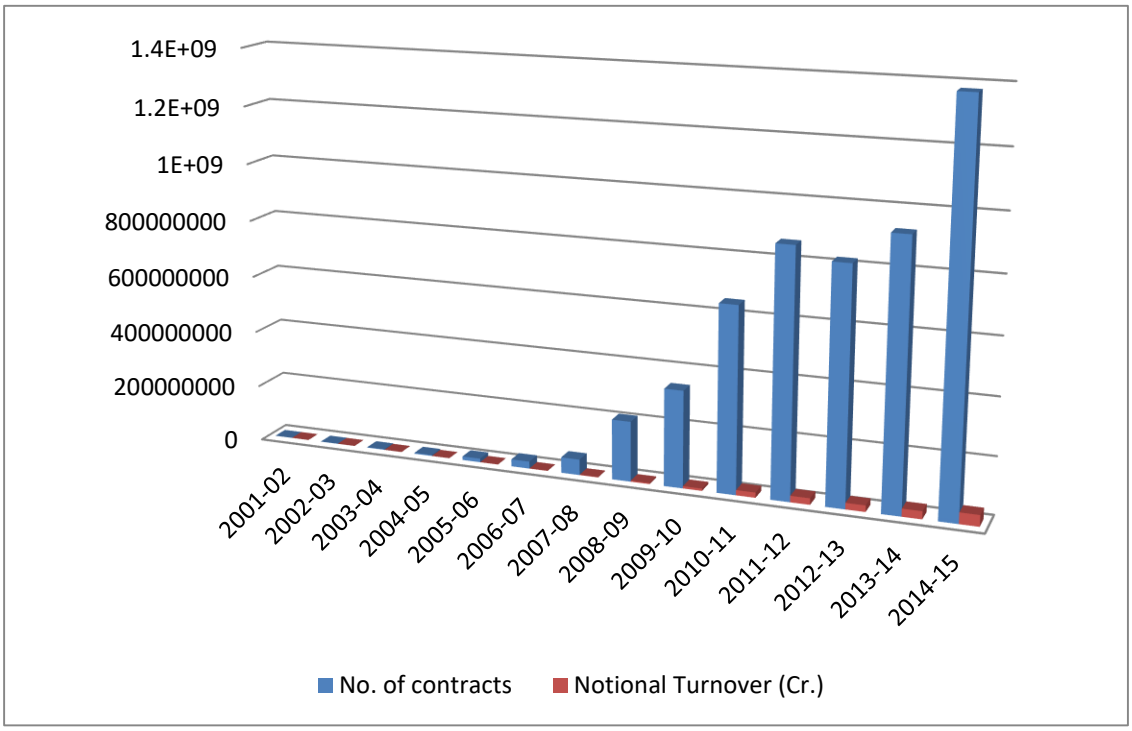

Figure 3 Growth of Turnover and No. of Contracts (Index Option)

Index Option: In our country (India) index options were introduced in Jun 2001 in that year numbers of contracts were 175900 and turnover (Rs. in crore) 3765 Just after 1-year number of Contracts were 1732414 and turnover (Rs in crore) 52816 in 2003-04. Number of contracts were increased by nearly 10 (1732414/175900=9.84 approx) times and amount increased by nearly 14 (52816/3765=14.03appx.) times only after 2 year in 2005-06 number of contracts were 12935116 and turnover (Rs. in crore) 338469.So number of contracts increased by nearly 7.5(12935116/1732414=7.5appx) times and amount increased by 6.5(338469/52816=6.41appx) times compare with 2003-04. If we compare with 2001-02 then it increased by 74(12935116/175900=73.54) times and 90(33869/3765=89.9appx.). Finally, after 14 years

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in 2014-15 no. of contracts reached to 1378642863 and turnover to Rs.39922663 crore i.e from inception Index Option increased by 7838(7837.65appx) and 10604(10603.628appx) times in no. of contract and turnover respectively. Therefore, index options are rapidly growing up in our country in number of Contract and turnover respectively [8].Growth of Turnover and No. of Contracts (Stock Option) Details & Graph Shown in Table 4 & Figure 4

Table 4 Growth of Turnover and No. of Contracts (Stock Option).

Year	Stock Option					
	No. of contracts			Notional Turnover (Cr.)		
		Increase	% of Increase		Increase	% of Increase
2001-02	1037529			25163		
2002-03	3523062	2485533	239.56275	100131	74968	297.9295
2003-04	5583071	2060009	58.4721189	217207	117076	116.922831
2004-05	5045112	-537959	-9.63553929	168836	-48371	-22.26954
2005-06	5240776	195664	3.87828853	180253	11417	6.76218342
2006-07	5283310	42534	0.81159737	193795	13542	7.51277371
2007-08	9460631	4177321	79.0663618	359136.6	165341.6	85.3177585
2008-09	13295970	3835339	40.5399915	229226.8	-129910	-36.172798
2009-10	14016270	720300	5.417431	506065.2	276838.4	120.770502
2010-11	32508393	18492123	131.933268	1030344	524279	103.599111
2011-12	36494371	3985978	12.2613812	977031.1	-53313.1	-5.174298
2012-13	66778193	30283822	82.9821728	2000427	1023396	104.745502
2013-14	80174431	13396238	20.0607974	2409489	409061.3	20.4486972
2014-15	91479209	11304778	14.1002285	3282552	873063.6	36.2343929

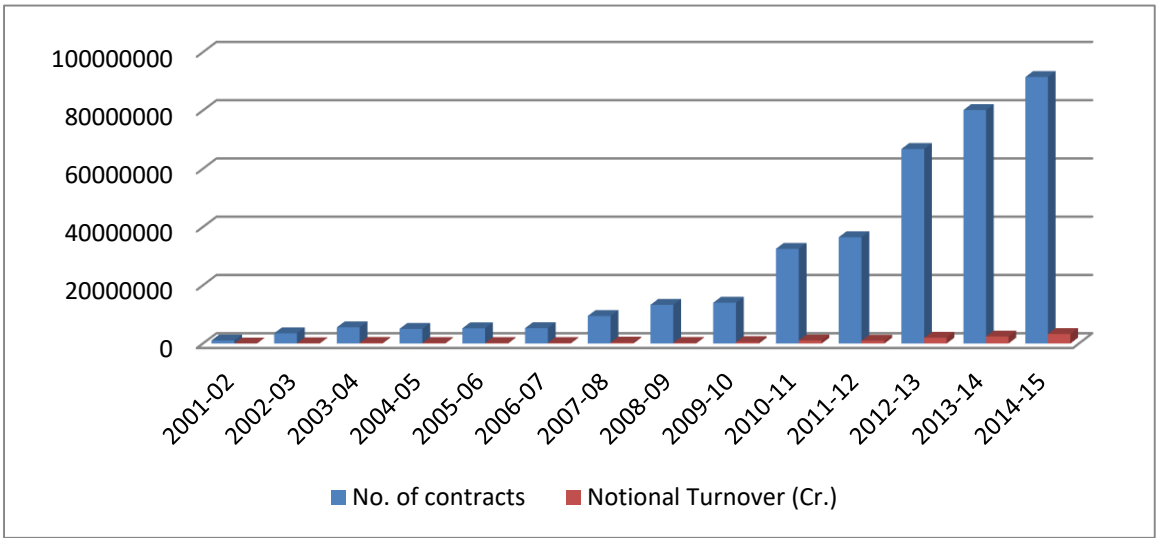

Figure 4 Growth of Turnover and No. of Contracts (Stock Option)

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Stock Option: Stock option was introduced in our country (India) in July 2001.In 2001-02 no. of contracts were 1037529 and turnover (Rs. in crore) 25163.Just after 1 year number of contracts were 5583071 and turnover (Rs. in crore) 217207 in 2003-04. Number of contracts were increased by nearly 5(5583071/1037529=5.38 approx) times and amount increased by nearly 9(217207/25163=8.63 approx.) times, only after 1 year in 2005-06 number of contracts were 5240776 and turnover (Rs. in crore) 180253.So number of contracts decreased by nearly (5583071/ 5240776 = 1.06 approx.) 1.06 times and amount decrease by (217207/180253=1.21) 1.2 times compare with 2003-04. If we compare with 2001-02 then it increased by 5(5240776/1037529=5.051appx.) and 7.2(180253/25163=7.16) times. Finally, after 14 years in 2014-15 no. of contracts reached to 91479209 and turnover to Rs.3282552.2 crore i.e. from inception Index Option increased by 88(88.17appx) and 130(130.45appx) times in no. of contract and turnover respectively. Therefore, stock options are growing very fast in our country.

Table 5 Top 10 Exchanges by Number of Stock Index Options Contracts Traded in 2013

Sl No.	Exchange	Millions of contracts traded	Notional value (bn USD)
1	NSE India	930	4665
2	Korea Exchange	580	67895
3	Eurex	317	13758
4	BSE Limited	250	1269
5	CBOE	230	37335
6	TAIFEX	110	1486
7	CME Group	92	10229
8	JPX Group (Osaka SE)	57	NA
9	Tel-Aviv SE	48	1672
10	Moscow Exchange	42	118
	Others	121	6396
	TOTAL	**2777**	**144823**

Source: Compiled from WFE/IOMA Derivatives Market Survey 2013

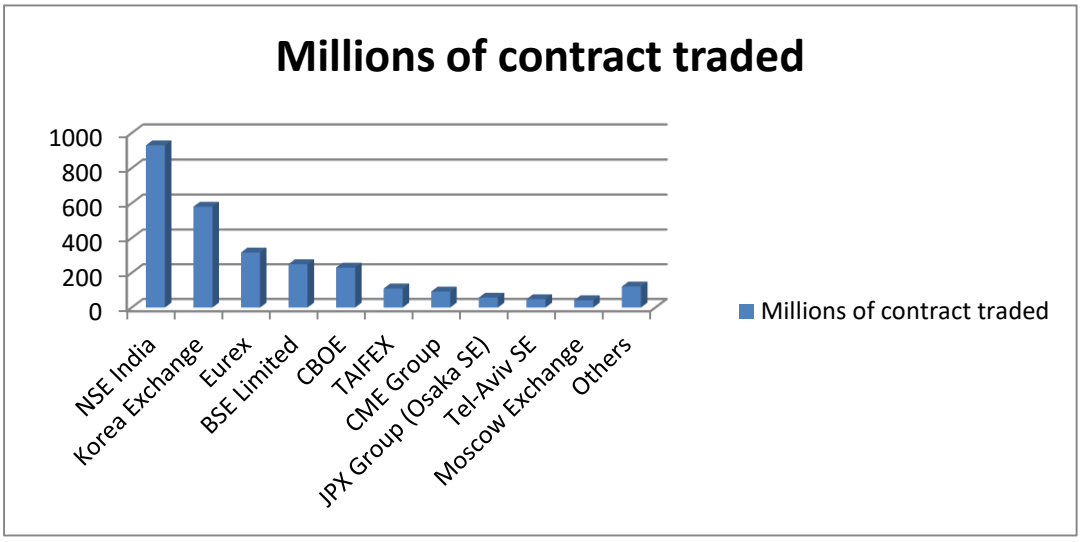

Figure 5 Top 10 exchanges by number of stock index options contracts traded in 2013

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Table 6 Top 10 exchanges by number of stock index futures contracts traded in 2013

Sl No.	Exchange	Millions of Contracts traded	Notional Value (bn USD)
1	CME Group	574	46792
2	Eurex	327	18711
3	Moscow Exchange	268	751
4	JPX Group (Osaka SE)	265	7497
5	CFFEX	193	22908
6	NSE India	102	502
7	SGX	100	NA
8	Liffe	82	6285
9	BM&FBOVESPA	74	851
10	HKEX	51	4666
	Others	297	17708
	TOTAL	**2333**	**126671**

Source: Compiled from WFE/IOMA Derivatives Market Survey 2013

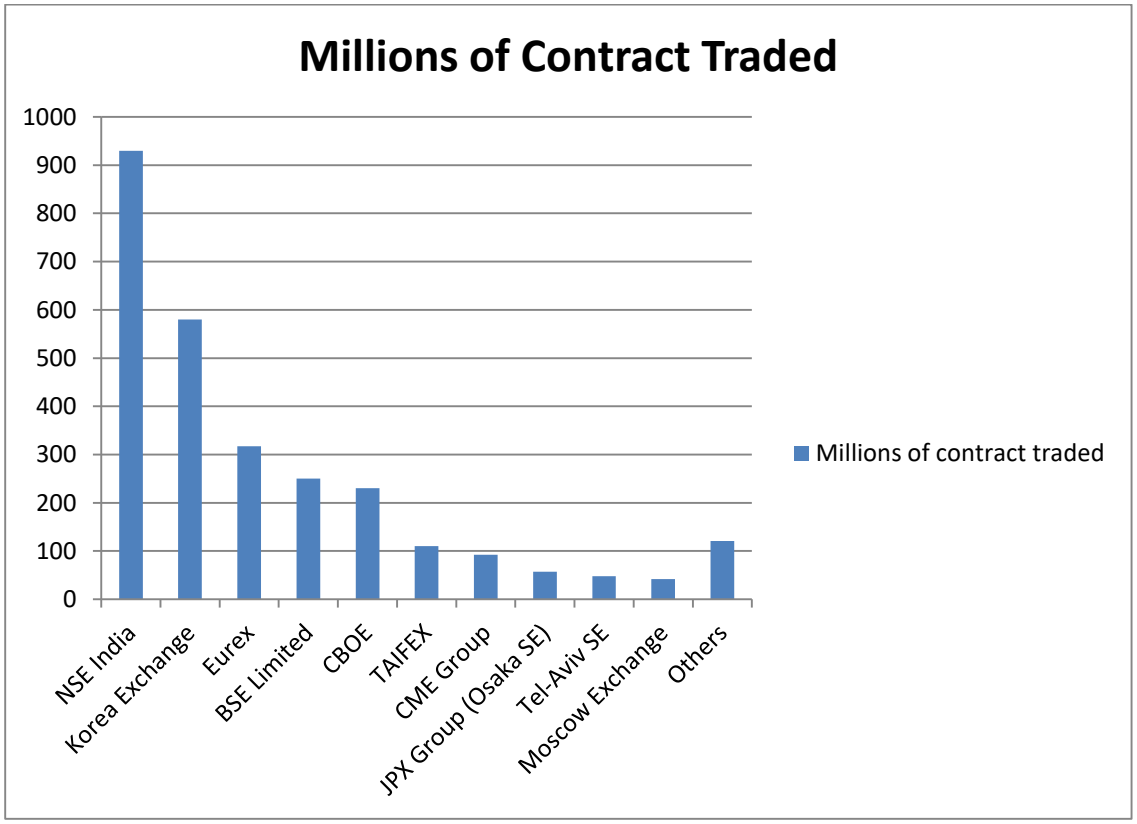

Figure 6 Top 10 exchanges by number of stock index futures contracts traded in 2013

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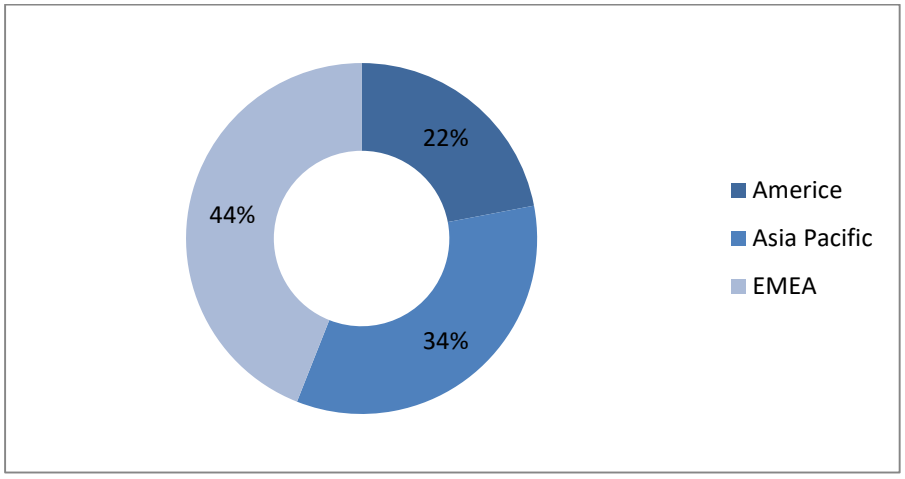

Figure 7 Region wise derivatives transactions
Source: WFE/IOMA Derivatives Market Survey 2013

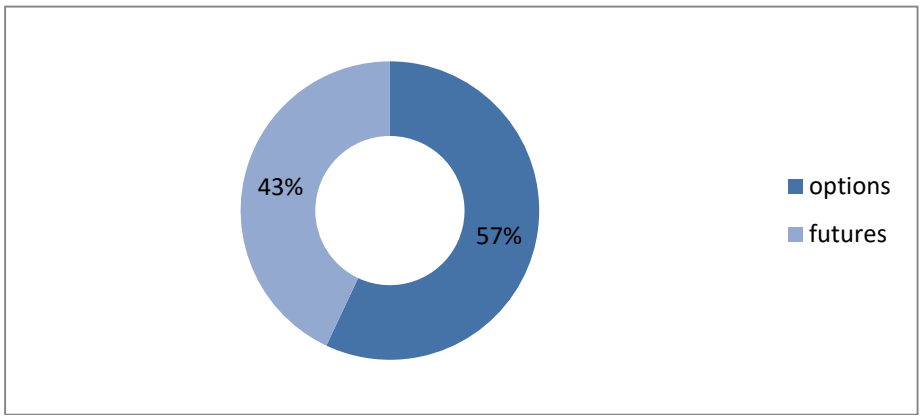

Figure 8 Product wise derivatives transactions
Source: WFE/IOMA Derivatives Market Survey 2013

6. Global Derivatives Market Vis-À-Vis Indian 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 selected stock exchanges of America, Asia Pacific and EAME region. Table 5, Table 6, Figure 5, Figure 6, Figure 7, Figure 8 show 2777 million no. of Stock Index Options contract traded in 2013 and notional value of Stock Index Option in the same year is 144823 USD billion out of which only NSE India occupied (930/2777) 33.4773% and hold the top position around the world. From Table 6 it is observed that total no. Of Stock Index Futures contract traded in 2013 is 2333 million and value is 126671 USD billion India are in sixth position. Figure 7 shows while India, Korea, Honkong, Tokyo i.e. Asia pacific region is growing very fast in global level, other exchange is also following at global level but comparatively low.

Conclusion

The trends of derivative in India are rapidly increased. The investors are interested about derivatives compare with stocks as hedging opportunities are available in derivative. Financial derivatives have earned a well-deserved 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

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opportunity to transfer risk from one to another. Launch of equity derivatives in Indian market has 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 Rs.28928 crores in 2001-02 toRs.43205215.2 crore in 2014-15 and value of NSE futures increased from Rs.72998 in2001-02 toRs.12398981.5 crore in 2014-15. India is one of the most successful developing countries in terms of a vibrate market for exchange-traded derivatives. Financial derivatives markets are not well- developed in India the traditional financial derivatives which exist in India are non-tradable Warrants, Convertibles, non-trade able buy-back options on industrial debentures and units of mutual funds, forward exchange contracts or currency forwards [9-11]. Over the past few years' certain new types of financial derivatives have been introduced. Since 1995, options trading was introduced. Since 1996, NSE introduce future and options exchange. In October 1996, the RBI liberalized derivatives policy and issued certain guidelines allowing banks to offer hedge instruments to corporate. Since April 1997, banks and corporate were allowed by the RBI to deal in swaps. Though derivatives are flourishing only two exchanges are introducing derivatives, NSE&BSE in our country [12]. Hope that every stock exchange is Introduce derivative very soon and investors are concentrated more and more in derivative.

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