



PERFORMANCE OF EQUITY DERIVATIVES MARKET IN INDIA WITH SPECIAL REFERENCE TO NSE

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ABSTRACT

One of the major developments that took place in the Indian capital market in the past two decades is the development of derivatives market. The derivatives market in India started in the year 2000 and the futures trading was started in 2000 in the National Stock Exchange of India Ltd (NSE) and the trading in options commenced in the NSE in 2001. Since then the equity derivatives market has exhibited exponential growth both in terms of volume and number of contracts traded. The major aim of this paper is to study the performance of equity derivatives market in India since its inception to till date. The data relating to equity derivatives in futures and options were collected from the official website of NSE www.nse.org. The data so collected has been analysed using percentage analysis to trace the growth in equity derivatives market. There is growth in index futures and index options as well as growth in stock futures and options have been analysed in this paper. The study found that the performance of Indian equity derivatives market is showing an upward trend since its inception in 2000. Out of the four derivative products, viz, stock futures, stock options, index futures and index options, the share of index options is dominating the NSE. This reveals that the Indian investors' awareness about derivatives trading is growing in general, and index options in particular.

KEY WORDS: *Capital market, derivatives trading, futures, options, NSE*

INTRODUCTION

One of the significant achievements of Indian capital market over the past two decades is the development of derivatives market. Derivatives were launched in the Indian capital market in the year 2000 as an innovative tool for risk management. It has significantly enhanced the sophistication and maturity of the market. In India, equity derivative trading began in June 2000. The National Stock Exchange of India Limited (NSE) commenced trading in derivatives with the launch of index futures on June 12, 2000. The futures contracts are based on the popular benchmark Nifty 50 Index. The Exchange introduced trading in Index Options (also based on Nifty 50) on June 4, 2001. NSE also became the first exchange to launch trading in options on individual securities from July 2, 2001. Futures on individual securities were introduced on November 9, 2001. Since then the equity derivatives market has exhibited exponential growth both in terms of volume and number of contracts traded. Within a short span of time derivatives trading has outperformed the cash segment in terms of turnover as well as the number of contracts traded. Futures and Options on individual securities are available on 175 securities stipulated in the NSE by SEBI. The Exchange has also introduced trading in Futures and Options contracts based on Nifty IT, Nifty Bank, and Nifty Midcap 50, Nifty Infrastructure, Nifty PSE, Nifty CPSE indices.

Being "Committed to improve financial well-being of the people of India" the National Stock Exchange of India Limited (NSE) in India stands for entrepreneurship and professionalism. Despite global financial crisis, NSE has continued to maintain market leadership within India as well as globally. As per Annual Report of NSE 2017, the NSE witnessed a domestic market share of 84% in cash market segment with 100% market share in the equity derivatives segment during the fiscal 2017. In this background, the present paper aims at studying the trends in equity derivatives market in India with special reference to the NSE.

REVIEW OF LITERATURE

A number of studies have been conducted on the Indian Capital Market and its trends. There are extensive studies, reports and books available on Indian Securities markets. This part of the paper brings out the results of few studies conducted in the area of derivatives markets in India.

^[1] Mohammed Rubani (2017) conducted "A study of derivative market in India". He made an attempt to analyse the factors contributing towards the growth of derivative market in India, he found that price volatility, globalization, technological development and advances in theories are major contributory to the explosive growth of derivative market.

^[2] Indu Gautam and Kavidayal (2016) studied the "Evolution and future prospects of Indian derivative market". The authors

have reviewed the present scenario of Indian derivatives market in relation to global derivative market. They identified various bottlenecks involved in its popularity and felt the need for resolving these issues to enhance the investors' confidence in the Indian derivative market.

^[3] Prakash Yalavatti (2015) made an attempt to throw light on the evolution of various financial derivative product since December 14, 1995 to October, 2010 in order to evaluate the development of financial derivative markets in India. He also made a comparative study on the performance of NSE and BSE derivative markets in India. He found that Indian derivative market is not fully developed due to the limited availability of financial derivative products particularly in BSE. The author opined that liberalizing the rules and provisions in favor of the traders will indeed contribute to the development of derivative markets.

^[4] "A Study of Derivatives Market in India and its Current Position in Global Financial Derivatives Markets" was conducted by Shalini and Raveendra (2014). The authors gave a detailed background relating to meaning of derivatives, types and brought out the historical developments of derivatives trading in India. The authors highlighted the chronological order in which developments took place in derivatives market in India in the two major stock exchanges namely, NSE & BSE. The authors concluded that the derivatives have contributed significantly in the development of Indian Financial System.

^[5] Niyati Chaudhary (2014) analysed the trend and growth pattern of derivatives market in India with reference to the NSE. The author expected the Indian market to become more vibrant and attain a leading position in the global financial system.

^[6] Indian Securities Market: A review (2013) published the statistics and developments in India's securities markets and brought out the fact that NSE ranks number 4 in single stock futures, number 2 in stock index options contracts traded and number 5 in stock index futures contracts traded.

^[7] Bhagwat (2012) in their study titled "An analysis of Indian financial Derivatives market and its position in Global Financial Derivatives Market" analysed the status of derivative products traded in the NSE and its contribution to the growth of derivatives market. His study showed that the derivatives trading in the NSE had surpassed the cash segment and explained the role of derivatives in price discovery.

^[8] Shree Bhagwat, Ritesh Omre and Deepak Chand (2012) studied the Development of Financial Derivatives Market in India and its Position in Global Financial Crisis. In this paper the authors have analysed the impact of global financial crisis on the financial derivatives market in India. It was found that the global financial crisis of 2008 has structurally altered the composition of equity derivatives market in India. The predominance of single stock futures as a derivative product has now been replaced by the predominance of index option as a favorite derivative product in India. The authors

opine that the speculative nature of single stock futures had been the prime reason for the dominance of this derivative product in the pre-crisis period. They also express that the such over domination of particular derivative products is not a healthy sign for the derivatives market in India.

^[9] "An Insight Into Derivative Markets: Indian Perspective" was brought out by Kumari (Oct 2011). In her paper she brought out the historical developments in derivatives trading, types of derivatives products traded, various regulations and policy developments and challenges faced by the derivatives markets in India. The author opined that Indian derivatives markets is still in an infant stage and identifies wide scope for its growth in the future.

The present study helps in knowing the present status of equity derivatives trading in the Indian equity derivatives market since its introduction in the Indian capital market.

^[10] Ashutosh Vashishtha and Satish Kumar (2010) made a study to understand "The development of financial derivatives market in India" in which analysis is made to understand the historical roots of derivative trading, types of derivative products, regulation and policy developments, trend and growth, future prospects and challenges of derivative market in India. Study concluded that sophisticated risk management tools and innovations in financial engineering that is driving the derivative market globally has also become instrumental for the development of Indian derivative market.

OBJECTIVES OF THE STUDY

- (i). to examine the business growth of different equity derivative products traded at the NSE; and
- (ii). to analyse the shift in trend in terms of usage of different products.

METHODOLOGY

The study is analytical in nature. The data required for the present study was collected from the secondary sources. Data relating to number of contracts traded and the total turnover in each segment of futures and options trading in equities as well as indices were collected from the official website of NSE (www.nse.org). Data for a period of 18 years (i.e, since the inception of derivatives trading in 2000) were collected from the website for data analysis and interpretation. Percentage has been calculated to find out the share of each category of equity derivative trading in the NSE and the same has been analysed for tracing the growth to draw meaningful conclusion.

DATA ANALYSIS AND INTERPRETATION

A. Business Growth in Index Futures

The table 1 shows derivatives trading in Index futures for the period 2000-01 to 2016-17 in absolute terms and in terms of its percentage share in total number of contracts traded in the NSE during the same period and its share in turnover expressed in crores of Rupees.

Table 1: Business Growth in Index Futures at NSE: 2000-01 to 2018-19

Index Futures				
YEAR	No. Contracts Traded	Turnover (Rs. In Crs)	Percentage Share of Index Futures in terms of Total	
			No. of Contracts	Turnover
2000-01	90580	2365	100	100
2001-02	1025588	21483	24.44	21.08
2002-03	2126763	43952	12.68	9.99
2003-04	17191668	554446	30.22	26.02
2004-05	21635449	772147	28.09	30.32
2005-06	58537886	1513755	37.14	31.38
2006-07	81487424	2539574	37.57	34.52
2007-08	156598579	3820667.3	36.85	29.19
2008-09	210428103	3570111.4	32.01	32.42
2009-10	178306889	3934388.7	26.25	22.27
2010-11	165023653	4356754.5	15.96	14.90
2011-12	146188740	3577998.4	12.13	11.41
2012-13	96100385	2527130.8	8.49	8.01
2013-14	105252983	3083103.2	8.19	8.07
2014-15	129303044	4107215.2	7.04	7.39
2015-16	140538674	4557113.6	6.70	7.03
2016-17	66535070	4335940.8	4.75	4.59
2017-18	57674584	4810454.3	3.01	2.92
2018-19	54330981	4478715.6	2.33	2.42

Source: https://www.nseindia.com/products/content/derivatives/equities/historical_fo_bussinessgrowth.htm

The above table reveals that the share of index futures in total number of contracts showed an increasing trend in the initial years and reached the maximum of 37.57% in 2006-07. In 2007-08 it showed a slight decline (36.85%) but continued to decline and reached the lowest in 2016-17 when the share was a meager 4.75%. In terms of turnover also the share of index futures showed an increasing trend since 2003-04 and reached the highest in 2006-07 at 34.52%. From 2007-08 the

share in turnover started declining and reached the lowest in 2016-17 at 4.60%. It may also be observed that from 2012-13 the share in terms of both number of contracts traded and in terms of turnover showed drastic decline to reach the lowest in 2016-17.

B. Business Growth in Stock Futures

Table 2 shows the business growth in stock futures at NSE for a 15 year period 2001-02 to 2018-19.

Business Growth in Stock Futures in NSE: 2001-02 to 2018-19

Year	Stock Futures			
	Contracts Traded	Turnover	Percentage Share of Stock Futures in terms of Total	
	(No.)	(Rs. in Crs)	No. of Contracts	Turnover
2000-01	-	-	-	-
2001-02	1957856	51515	46.65	50.54
2002-03	10676843	286533	63.67	65.14
2003-04	32368842	1305939	56.90	61.29
2004-05	47043066	1484056	61.08	58.27
2005-06	80905493	2791697	51.33	57.87
2006-07	104955401	3830967	48.39	52.08
2007-08	203587952	7548563.23	47.90	57.66
2008-09	221577980	3479642.12	33.71	31.60
2009-10	145591240	5195246.64	21.43	29.41
2010-11	186041459	5495756.7	17.99	18.79
2011-12	158344617	4074670.73	13.14	13.00
2012-13	147711691	4223872.02	13.05	13.40
2013-14	170414186	4949281.72	13.27	12.95
2014-15	237604741	8291766.27	12.93	14.91
2015-16	234243967	7828606	11.16	12.08
2016-17	173860130	11129587.14	12.42	11.79
2017-18	214758366	15597519.71	11.22	9.45
2018-19	201838153	13003755.38	8.66	7.01

Source: https://www.nseindia.com/products/content/derivatives/equities/historical_fo_bussinessgrowth.htm

Table 2 reveals that the equity trading in stock futures were launched in 2001 and the trade in futures increased in the next year contributing about 65% share in total turnover in the year 2002-03 and maintained more than 50 % share upto 2007-08. The share of stock futures started declining in 2008-09 and reached a low of 11.79 % in 2016-17. Since 2011-12, the share had declined to less than 20% and owing to downward trend since 2016-17 to 2018-19. When one compares the percentage share of index futures with that of

stock futures, the share of index futures is more than the share of stock futures both in terms of contracts traded and turnover in crores of Rupees, the share of index futures is thrice that of stock futures.

C. Business Growth of Index Options

The equity trading in derivatives in the form of index options also was launched in the year 2001-02 in the NSE. Table 3 shows the business growth in index options in the NSE since its inception.

Business Growth in Index Options at NSE: 2001-02 to 2018-19

Year	Index Options			
	Contracts Traded	Turnover	Percentage Share of Index options in terms of Total	
	(No.)	(Rs. in Crs)	No. of Contracts	Turnover
2000-01	-	-	-	-
2001-02	175900	1299	4.19	1.27
2002-03	442241	112.7	2.64	0.03
2003-04	1732414	991.48	3.05	0.05
2004-05	3293558	2356.98	4.28	0.09
2005-06	12935116	5770.52	8.21	0.12
2006-07	25157438	17650.87	11.60	0.24
2007-08	55366038	29286.09	13.03	0.22
2008-09	212088444	91715.58	32.26	0.83
2009-10	341379523	124416.58	50.26	0.70
2010-11	650638557	192637.87	62.91	0.66
2011-12	864017736	253068.22	71.70	0.81
2012-13	820877149	184383.24	72.55	0.58
2013-14	928565175	244090.71	72.29	0.64
2014-15	1378642863	265315.63	75.05	0.48
2015-16	1623528486	351221.01	77.36	0.54
2016-17	1067244916	350021.53	76.25	0.37
2017-18	1515034222	460653.71	79.16	0.28
2018-19	1930880197	511122.1	82.85	0.28

Source: https://www.nseindia.com/products/content/derivatives/equities/historical_fo_bussinessgrowth.htm

Table 3 reveals the growth of index options in terms of number of contracts traded and in terms of turnover at NSE since its inception. It is observed from this table that in the initial years of its inception, i.e., from 2001-02 to 2005-06, the share of index options was less than 10% in both the terms. From 2006-07 there is a continuous growth in index options. In 2006-07 the share of index options was 11.60% and it reached the highest in 2015-16 and reached a share of 77.36% out of total number of contracts traded. In terms of

turnover, the share of index options in 2007-08 was 13.03% and increased continuously to reach the highest share of 82.85% in 2018-19. Thus, one can imply that the equities trading in derivatives in the form of index options have gained momentum in the Indian capital market.

D. Business Growth in Stock Options

Equity derivatives trading in the category of stock options was also launched in India at the NSE in 2001. Table 4 shows the trend in stock options at the NSE for the period 2001-02 to 2018-19.

Year	Stock Options			
	Contracts Traded	Turnover	Percentage Share of Stock options in terms of Total	
	(No.)	(Rs. in Crs)	No. of Contracts	Turnover
2000-01	-	-	-	-
2001-02	1037529	1305.23	24.72	1.28
2002-03	3523062	3033.97	21.01	0.69
2003-04	5583071	8054.86	9.81	0.38
2004-05	5045112	4948.95	6.55	0.19
2005-06	5240776	4895.23	3.32	0.10
2006-07	5283310	5904.31	2.44	0.08
2007-08	9460631	13581.77	2.23	0.10
2008-09	13295970	8250.53	2.02	0.07
2009-10	14016270	15272.89	2.06	0.09
2010-11	32508393	20474.97	3.14	0.07
2011-12	36494371	19612.93	3.03	0.06
2012-13	66778193	34288.56	5.90	0.11
2013-14	80174431	46428.41	6.24	0.12
2014-15	91479209	61732.59	4.98	0.11
2015-16	100299174	61118.39	4.78	0.09
2016-17	92106012	95570.09	6.58	0.10
2017-18	126411376	148217.5	6.60	0.09
2018-19	141214253	158069.32	6.06	0.09

Source: https://www.nseindia.com/products/content/derivatives/equities/historical_fo_bussinessgrowth.htm

Table 4 reveals that the business growth in stock options is showing a declining trend since 2003-04 both in terms of its share in the number of contracts traded and its turnover. The decrease in number of contracts continued upto 2011-12 and started showing an increasing trend in 2012-13 and once again started decreasing in 2014-15. But in 2018-19 the share has slightly increased, yet, it is not significant and continued to remain less than 10%.

TREND IN INDIA'S EQUITY DERIVATIVES MARKET: 2000-01 TO 2018-19

Table 5 shows the trend in India's Equity Derivatives Market since its inception in the year 2000. Table shows the share of equity derivatives in the form of futures and options in single stock futures as well as indices.

Table 5: Percentage Share of Different Equity Derivatives Products in NSE

Year	Index Futures	Index Options	Stock Futures	Stock Options
2000-01	100.00	-	-	-
2001-02	21.08	1.27	50.54	1.28
2002-03	9.99	0.03	65.14	0.69
2003-04	26.02	0.05	61.29	0.38
2004-05	30.32	0.09	58.27	0.19
2005-06	31.38	0.12	57.87	0.10
2006-07	34.52	0.24	52.08	0.08
2007-08	29.19	0.22	57.66	0.10
2008-09	32.42	0.83	31.60	0.07
2009-10	22.27	0.70	29.41	0.09
2010-11	14.90	0.66	18.79	0.07
2011-12	11.41	0.81	13.00	0.06
2012-13	8.01	0.58	13.40	0.11
2013-14	8.07	0.64	12.95	0.12
2014-15	7.39	0.48	14.91	0.11
2015-16	7.03	0.54	12.08	0.09
2016-17	4.59	0.37	11.79	0.10
2017-18	2.92	0.28	9.45	0.09
2018-19	2.42	0.28	7.01	0.09

From table 5 it is observed that till the year 2007-08, trade in single stock futures at the NSE has been the highest at 57.66% share in total turnover compared to the trading in other derivative instruments followed by index futures. In 2007, the NSE had the world's fourth largest trade in single stock futures. But, from 2008-09 the share of options trading in total turnover shows an increasing trend. From a meager share of 3.69% in 2001-02 it moved gradually to double digit share in 2006-07 and reached the share of 11.79% in 2016-17. Since 2011-12 the derivatives market showed a shift from single stock futures to index options trading. An interesting

feature to notice is that the share of index futures and the stock options are showing a declining trend with less than 10% share in total turnover. The share of single stock futures is above 10%; yet, it shows a declining trend. These changes in derivatives market reveals that the NSE has created awareness to the Indian investors through its investors' education programs as well as through its certificate courses. Technically, though the options trading are considered to be too complex with different types of options the increase in share is also an indicator of the fact that the derivatives market is becoming more sophisticated with matured participants.

Table 6: NSE's ranking among World's Exchanges: 2017

Table 6 shows NSE's ranking among World's Exchanges in 2017 in terms of number of contracts traded.

Product	Global Ranking in terms of No. of Contracts Traded
Index Options	1
Currency Options	1
Single Stock Futures	2
Currency Futures	2
CM Segment	3

Source: Annual Report of NSE, 2017-18

Table 6 reveals that the NSE stands first in global ranking in terms of number of contracts traded in the index options and the currency options segment. The Annual Report of NSE, 2017-18 also reveals the fact that the NSE stands second in the world in terms of number of contracts traded in the stock futures and index futures segment. In the cash market segment it holds third rank globally implying that the NSE's equity derivatives market has surpassed its cash market segment too. This implies that the Indian derivatives market

is moving towards International standards and becoming the most attractive destination for derivatives trading in the near future.

FINDINGS

The findings of the present study based on the data analysis made using percentage share of various equity derivative products, viz, futures and options in single stocks as well as indices, in terms of number of contracts traded and their respective share in total turnover are presented

- The share of index futures in total number of contracts showed an increasing trend in the initial years only and reached a global place in 2006-07. Thus, during the past 17 year period, the index futures showed an increasing trend only in five years and in the remaining 12 years, there was a declining trend.
- The share of equity derivatives trading in single stock futures were more than 50 % upto 2007-08. But it started declining in 2008-09 and since 2011-12 the share had declined to less than 20% and reached the lowest in 2016-17.
- The share of index futures is more than the share of stock futures both in terms of contracts traded and turnover in crores of Rupees, the share of index futures is thrice that of stock futures.
- The equities trading in derivatives in the form of index options shows an increasing trend since 2007-08 both in terms of number of contracts traded and its share in turnover.
- The performance of single stock options in equity derivatives market shows a mixed trend. Its share in total number of contracts and total turnover is less than 10%.
- The share of index futures and the stock options are showing a declining trend with less than 10% share in total turnover.
- Since 2011-12 the derivatives market shows a shift from single stock futures to trading in index options.

CONCLUSION

To conclude, the performance of Indian equity derivatives market is showing an upward trend since its inception in 2000. Out of the four derivative products, viz, stock futures, stock options, index futures and index options, the share of index options is dominating the NSE with more than 75% share which implies the confidence of investors that is assured through the stringent norms imposed by the SEBI to protect the investors' interests from stock market manipulations and company frauds.

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