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Derivative Trading in Indian Capital Market: An Empirical Study of NSE

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Abstract

Financial sector reforms in the decade of 1990's have twisted the Indian capital markets into a dynamic and extensive in the context of world financial market. With the arrival of globalization in India rigorous efforts are made in reinforcement the investor assurance. Financial markets are very inventive in augmenting the popularity of derivatives instruments which exemplifies how resourcefully markets are capable to package and manage risk. At the present in world markets for trade and business have become further incorporated, derivatives have strengthened these significant linkages between global markets, increasing market liquidity and effectiveness. In India, the emergence and growth of derivatives market is relatively a recent phenomenon. By locking in asset prices, derivative products lessen the effect of fluctuations in asset prices on the profitability and cash flow position of risk-averse investors. Since its inception in June 2000, derivatives market has exhibited exponential growth both in terms of volume and number of contract traded.

Thus the present study is an effort to analyze derivative trading in India, policy development and regulation in relation to Indian stock market. It is an endeavour to demonstrate the growth and expansion of financial derivative of NSE in India in the time period i.e 2000 -2001 to 2012-2013.

Keywords:

Financial Derivatives, Derivative Market, Financial Market, NSE, Derivative Trading

Introduction

With the increase in internalization of economic activity and the unparalleled currency and interest rate volatility, risk hedging techniques have grown at a rapid speed minimizing the effect of uncertain cash flows. The emergence of the market for derivative instruments can be traced back to the eagerness of risk unwilling economic agents to protect themselves against worries arising out of fluctuations in asset prices. Derivatives are projected to smooth progress of the hedging of price risks or financial transaction over a certain time period. By providing investors and issuers with a wider range of tools for overseeing risks and raising capital, derivatives get better in the allotment of credit and sharing of risk in the comprehensive economy, lowering the cost of capital formation and stimulating economic growth. With the introduction of the derivatives, the speculative trades have shifted to a more controlled environment with risk containment measures like margining, monitoring ad supervision of the performance of various participants. Derivatives trading commenced in India in June 2000 after the SEBI granted the approval to this effect in May 2001. The stock exchanges NSE and BSE are permitted to deal in approved derivatives contracts. There are enormous increasing trends in the turnover of NSE segment. However, the trading volume in the BSE derivative segment has been decreasing since 2005.

The present paper aims to assess the regulations and policies framed in developments of derivative trading in Indian stock market. It is an attempt to exhibit the growth and improvement of financial derivative of NSE in India.

Objectives of the Study

In the last decade, many promising and transition economies have in full swing in introducing derivative contracts. Policy makers and regulators in these markets are anxious about the impact of futures on the underlying cash market. In this regards the present study aspires to make a modest attempt

- To assess the regulations and policies framed in consider to developments of derivative trading in Indian stock market.
- To analysis the growth and trend of NSE derivatives segment turnover.

Research Methodology

The present study has been undertaken with a manifestation of empirical analysis of status of financial derivatives in India with the use of secondary data. Here the study period is taken from 2000–2001 to 2012-13. Data and information for the research study were collected and analysed from secondary published sources, *viz*., books, newspapers, web sites and research studies.

Significance of the Study

Globalization of financial markets has strained a number of countries to change laws and bring in recent financial contracts which have made it easier for the participants to undertake derivatives transactions. Financial derivatives have emerged as one of the biggest markets of the world during the past two decades. In this context the present study seeks to find out the influence of derivative in consideration of NSE in Indian capital market.

Review of Literature

The markets for financial derivatives futures and options can be regarded as the essence of these new structures which will stimulate reflection that is characterised high degree of internationality. Following are the relevant literature which will provide in depth knowledge about the concept of derivative in Indian stock market. P. Hemavathi (2013) in her study made an endeavour to look over the beginning of derivatives trading in India and its regulation for prolonging the sustainability of derivative trading in relation to Indian capital market. Shree Bhagwat and *et al* (2012) in their study they tries to describe the concept of *financial derivatives as the derivatives revolution in the world of finance due to its fully fledged growth with so incomparable swiftness all over the globe..* **Vashishtha and et.al, (2010),** In their study they watchfully investigation of historical roots of derivative trading, regulation and policy developments, trend and growth, future prospects and challenges of derivative market in India. They also had given more attention about the status of global derivatives markets in relation to the Indian derivatives market. Bandivadekar, S. & Ghosh, S. (2003) in their paper disclose the impact of beginning of index futures on spot market impulsiveness on both S&P CNX Nifty and BSE Sensex using ARCH/GARCH technique. Their study points in the way of a decline in spot market unpredictability after the beginning of index futures due to enlarged impact of recent news and condensed effect of improbability originating from the old news.

Derivatives Trading in India

Now-a-days in the worldwide scenario financial market has undergone massive changes due to amazing development of derivatives which play a remarkable place in implementing various financial policies. The emergence of derivatives market is an ingenious achievement of financial trade with an intend of providing a proficient explanation to the problem of risk that is surrounded in the price impulsiveness of the underlying asset. Derivatives market is reasonably a latest occurrence In India since its commencement in June 2000; it has exhibited exceptional improvement both in terms of volume and number of traded contracts. It is found out that in recent times derivatives trading in India has surpassed cash segment in terms of turnover and number of traded contracts. India's assignation with derivatives began in 2000 when both the NSE and the BSE commenced trading in equity derivatives .In June 2000, index futures became the first type of derivate instruments to be launched in the Indian markets, followed by index options in June 2001, options in individual stocks in July 2001, and futures in single stock derivatives in November 2001. Since then, equity derivatives have come a long way. New products, an expanding list of eligible investors, rising volumes, and the best risk management framework for exchange-traded derivatives have been the hallmark of the journey of equity derivatives in India so far.

Policy Developments and Regulatory Framework

A. Introduction of Derivative Contracts on Volatility Index

In continuance to the SEBI circular dated January 15, 2008 concerning the introduction of the volatility index, the capital market regulator, vide its circular dated April 27, 2010, resolute to allow stock exchanges to introduce derivatives contracts on volatility index. The introduction of derivatives contracts on volatility index is subject to the circumstance that the underlying volatility index has a track record of at least one year.

B. Introduction of Index Options with Tenure Up To Five Years

Further to SEBI's circular dated January 11, 2008, as regards the introduction of index options with tenure up to three years, the SEBI certain to consent the stock exchanges to introduce option contracts on the SENSEX and the Nifty with a term up to five years. The introduction of such five-year option contracts will be subject to the condition that there are eight semi-annual contracts of the cycle June/December together with three serial monthly contracts, and three quarterly contracts of the cycle March/June/September/December.

C. Revised Exposure Margin for Exchange-Traded Equity Derivatives

In a modification to SEBI's circular on exposure margin, the SEBI decided (vide its circular dated July 7, 2010) that the exposure margin for exchange-traded equity derivatives shall be the higher of 5 percent or 1.5 times the standard deviation (of daily logarithmic returns of the stock price).

D. Physical Settlement of Stock Derivatives

In persistence to SEBI's circular dated June 20, 2001 and November 02, 2001 concerning the settlement of stock options and stock futures contracts, respectively, the SEBI—based on the recommendations of the Derivatives Market Review Committee and in discussion with stock exchanges—decided to make available flexibility to the stock exchanges to offer:

a) Cash settlement (settlement by payment of differences) for both stock options and stock futures; or b) Physical settlement (settlement by delivery of underlying stock) for both stock options and stock futures; or c) Cash settlement for stock options and physical settlement for stock futures; or d) Physical settlement for stock options and cash settlement for stock futures.

E. Options on USD-INR spot rate

The SEBI, vide its circular dated July 30, 2010, has endorsed for the beginning of options on USD-INR spot rate on the currency derivatives segment of the stock exchanges. Premium styled European call and put options can be introduced on the USD-INR spot rate. The contract would be settled in cash in Indian rupees, and the final settlement price would be the RBI Reference Rate on the date of expiry of the contracts.

Self clearing member in the currency derivatives (Circular date : May 13, 2011) With regard to the newly created category of self clearing member in the currency derivatives segment of a stock exchange (communicated vide notification no. LADNRO/ GN/2011-12/01/11486 dated April 6, 2011), has the SEBI clarified that such self clearing member shall have a minimum net worth of ` 5 crore.

Liquidity enhancement schemes for illiquid securities in equity derivatives segment (Circular date : June 02, 2011) In discussion with the BSE, the MCX-SX, the NSE, and the USE, the SEBI has decided to permit stock exchanges to introduce one or more liquidity enhancement schemes (LES) to augment the liquidity of illiquid securities in their equity derivatives segments.

The regulatory framework in India is based on the L.C. Gupta Committee Report, and the J.R. Varma Committee Report. The L.C. Gupta Committee Report provides a perspective on division of regulatory responsibility between the exchange and the SEBI. It recommends that SEBI's role should be restricted to approving rules, bye laws and regulations of a derivatives exchange as also to approving the proposed derivatives contracts before commencement of their trading. It emphasises the supervisory and advisory role of SEBI with a view to permitting desirable flexibility, maximizing regulatory effectiveness and minimizing regulatory cost. Regulatory requirements for authorization of derivatives brokers/dealers include relating to capital adequacy, net worth, certification requirement and initial registration with SEBI. It also suggests establishment of a separate clearing corporation, maximum exposure limits, mark to market margins, margin collection from clients and segregation of clients' funds, regulation of sales practice and accounting and disclosure requirements for derivatives trading. The J.R. Varma committee suggests a methodology for risk containment measures for index-based futures and options, stock options and single stock futures. The risk containment measures include calculation of margins, position limits, exposure limits and reporting and disclosure

National Stock Exchange (NSE): An Overview

The National Stock Exchange of India Limited (NSE) is one of the foremost stock exchanges of India, situated in **Mumbai** which was established in 1992 as the first demutualized electronic exchange in the country. NSE was the first exchange in the country to provide a modern, fully automated screen-based electronic trading system which offered trouble-free trading provision to the investors spread across all over the country. It was established by a group of financial institutions in India at the behest of the government of India to bring lucidity to the Indian capital market. Based on the recommendations laid out by the government committee, NSE has been established with a diversified shareholding comprising domestic and global investors. The key domestic investors include Life Insurance Corporation of India, State Bank of India, IFCI Limited and IDFC Limited. As of 23 January 2015, NSE has a market capitalization of more than US$1.65 trillion, making it the world's 12th-largest stock exchange. NSE's flagship index (Nifty), the 50 stock indexes, is used expansively by investors in India and more or less in the world. NSE was played a major role in establishing the National Securities Depository Limited (NSDL) which allows investors to firmly hold and transfer their shares and bonds electronically. It also allows investors to hold and trade in as few as one share or bond. This not only made holding financial instruments convenient, but further decisively eliminated the need for paper certificates and greatly reduced the incidents of forged or fake certificates and fraudulent transactions that had plagued the Indian stock market. NSE offers trading, clearing and settlement services in equity, equity derivatives, and debt and currency derivatives segments. NSE commenced operations in the Wholesale Debt Market (WDM) segment in June 1994. The capital market (equities) segment of the NSE commenced operations in November 1994, while operations in the derivatives segment commenced in June 2000.

Derivatives Products Traded in Derivatives Segment of NSE

Amongst all the products traded on NSE in Futures & Option segment, single stock futures also known as equity futures, are the most popular in provisions of volumes and number of contract traded, followed by index futures with turnover shares. NSE underway trading in index futures, based on popular S&P CNX Index, on June 12, 2000 as its first derivatives product. Trading on index options was introduced on June 4, 2001. Futures on individual securities started on November 9, 2001. The futures contracts are available on 2338 securities stipulated by the Securities & Exchange Board of India (SEBI) and trading in options on individual securities started from July 2, 2001. The options contracts are American style and cash settled and are available on 233 securities. Trading in interest rate futures was introduced on 24 June 2003 but it was closed subsequently due to pricing problem. The NSE achieved another landmark in product introduction by launching Mini Index Futures & Options with a minimum contract size of Rs 1 lakh. NSE crated history by the introduction currency futures contract on US Dollar-Rupee on August 29, 2008 in Indian Derivatives market. Table 1 presents a description of the types of products traded at F& O segment of NSE with their introduction date.

Table 1: Products Traded in F&O Segment of NSE

SL.NO	Product Traded with underlying asset	Introduction Date
1	Index Futures- S&P CNX Nifty	June 12,2000
2	Index Options- S&P CNX Nifty	June 4,2001
3	Stock Option on 233 Stocks	July 2, 2001
4	Stock futures on 233 Stocks	November 9,2001
5	Interest Rate Futures- T – Bills and 10 Years Bond	June 23,2003
6	CNX IT Futures & Options	August 29,2003
7	Bank Nifty Futures & Options	June 13,2005
8	CNX Nifty Junior Futures & Options	June 1,2007
9	CNX 100 Futures & Options	June 1,2007
10	Nifty Midcap 50 Futures & Options	October 5,2007
11	Mini index Futures & Options - S&P CNX Nifty index	January 1, 2008
12	long Term Option contracts on S&P CNX Nifty Index	March 3,2008
13	Currency Futures on US Dollar Rupee	August 29,2008
14	S& P CNX Defty Futures & Options	December 10, 2008

Source: *Compiled from NSE website*

Table 2: NSE Derivatives Segment Turnover (Rs. Cr.)

Year	Index Futures	Stock Futures	Index Options	Stock Options	Total	Avg.Daily Turnover
2012-13	1522594.88	2146022.55	12228169.28	910995.66	16807782.22	120055.59
2011-12	3577998.41	4074670.73	22720031.64	977031013	31349731.74	125902.54
2010-11	4356754.43	5495766.70	18365365.76	1030344.21	29248221.09	115150.48
2009-10	3934388.67	519524.64	8027964.20	506065.18	17663664.57	7292.07
2008-09	3570111.40	347964.64	3731501.84	229226.81	11010482.20	45310.63
2007-08	3820667.27	7548563.23	1362110.88	359136.55	13090477.75	52153.30
2006-07	2539574	3830967	791906	193795	7356242	29543
2005-06	1513755	2791697	338469	180253	4824174	19220
2004-05	772147	1484056	121943	168836	2546982	10107
2003-04	554446	1305939	52816	217207	2130610	8388
2002-03	43952	286533	9246	100131	439862	1752
2001-02	21483	51515	3765	25163	101926	410
2000-01	2365	----	----	----	2365	11

Source: Compiled from NSE

From this table 2 it reveals that average daily turnover was 11 crore in 2000-01 and it increases to 45310.63 in 2008-09. Throughout these years the average turnover is increasing in quality which reaches to 1200550.59 in 2012-13. The index future of derivative on the NSE goes up from Rs. 23654 crore in 2000-01 to Rs. 130904779 crore in the year 2007-08. It again reaches its maximum turnover i.e. 1522594.88cr in 2012-13. In the perspective of the study period total amount of NSE derivative total segment turnover in India shows a mounting trend. In 2001-02 it is 101926 crore and it reaches optimum at 16807782.22 crore in 2012-13. Again this paper finds out the accelerating trend in average daily turnover of NSE derivative segment. It was increase from 410 crore in 2001-02 to 120055.59 crore in the year 2012-13. In the case of Index Options it is found that in 2002-03 the amount of turnover is 9246 crore which reaches its zenith point in the year 2011-12 i.e 22720031.64 crore.Similarly in stock option also shown a positive trend all the way through the study period i.e 2000-01 to 2012-13.

Findings and Suggestions

While the growth is being spearheaded mainly by retail investors, private sector institutions and large corporations, smaller companies and state-owned institutions are gradually getting into the act. In this regard the present study has certain findings-

- Total amount of NSE derivative total segment turnover in India capital market shows a positive trend i.e. in 2001-02 it is 101926crore and it reaches optimum at 16807782.22 crore in 2012-13 almost more than it was expected.
- Average daily turnover of NSE derivative segment turnover was 11 crore in 2000-01 and it reaches to 1200550.59 in 2012-13 which depicts a mounting trend in the Indian financial market that attracts the ultimate investor.
- There is an increasing sense that financial derivative (equity) market has a vital role in shaping price discovery in the context of Indian financial market.
- The growth of derivative is enhanced due to various factors like increased volatility in financial assets, development of risk management tools and strategies.
- As Indian derivatives markets grow more sophisticated, greater investor awareness will become essential.
- In addition, institutions will require devoting more resources to develop the business processes and technology needed for derivatives trading.

Conclusion

The advancement of financial derivatives have earned significant place in the midst of all the financial instruments due to improvement and revolutionized the landscape The augmentation of Indian derivative market in the recent years has surpassed the growth of its counterpart globally. Advancement in the derivative markets is at a standstill in a gradient stage and there is enormous possibility for further development. SEBI have to take crucial steps for development in Derivative Market to attract more investors in the Indian stock market. In order to attain high-quality derivative market operations regulators and exchanges in discussion with market participants must come up with indispensable regulatory changes, which are delightful to all.

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