Derivative Trading and Stock Market Volatility in India

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Abstract

Stock prices are changed every day by the market. Buyers and sellers cause prices to change as they decide how valuable each stock is. Stock market volatility is significant and understanding it is imperative to investing in stocks that suit your investment or trading style and risk tolerance level. The derivative trading was initiated in the Indian Capital Market by the Government following L .C. Gupta Committee Report on derivatives in December 1997. The present study examined the impact of derivatives trading on the stock market volatility. The study attempted to estimate the volatility implications of the introduction of derivatives on the cash market. Through this study, we seek evidence regarding whether the listing of futures and options lead to any significant change in the volatility of the stock market in India.

Key words: Derivative Trading, Stock Market, Volatility, F & O

Introduction

Stock exchange is one of the important constituent of the Capital Market. Stock exchange is an organized market for the purchase and sale of industrial and financial securities. It is convenient place where trading in securities is conducted in systematic manner i.e. as per certain rules and regulations.It performs various functions and offers useful services to investors and borrowing companies. It is an investment intermediary and facilitate economic and industrial development of the country. It provides a convenient and secured mechanism or platform for transactions in different securities. Such securities include shares and debentures issued by public companies which are duly listed at the stock exchange and bonds and debentures issued by government, public corporations and municipal and port trust bodies

The origin of the stock market relates back to the year 1494, when the Amsterdam Stock Exchange was set up. In India it dates back to the 18th century, an era when the East India Company was a dominant Institution in those days and business in its loan securities used to be transacted towards the close of the eighteenth century. By 1830's business on corporate stocks and shares in Bank and Cotton presses took place in Bombay. Though the trading list was broader in 1839, there were only half a dozen brokers recognized by banks and merchants during 1840 and 1850 .The 1850's witnessed a rapid development of commercial enterprise and brokerage business attracted many men into the field and by 1860 the number of brokers increased into 60.

In 1860-61 the American Civil War broke out and cotton supply from United States of Europe was stopped; thus, the 'Share Mania' in India begun. The number of brokers increased to about 200 to 250. However, at the end of the American Civil War, in 1865, a disastrous slump began (for example, Bank of Bombay Share which had touched Rs 2850 could only be sold at Rs. 87). At the end of the American Civil War, the brokers who thrived out of Civil War in 1874, found a place in a street (now appropriately called as Dalal Street) where they would conveniently assemble and transact business. In 1887, they formally established in Bombay, the "Native Share and Stock Brokers' Association" (which is alternatively known as "The Stock Exchange"). In 1895, the Stock Exchange acquired a premise in the same street and it was inaugurated in 1899. Thus, the Stock Exchange at Bombay was consolidated

"The Bombay Stock Exchange" (BSE) was founded in the year 1875. "The Ahmadabad Shares and Stock Association" was formed in the year 1894. The Calcutta Stock Exchange Association was formed by about 150 brokers on 15th June 1908. In the year 1920, one stock exchange was established in Northern India and one in Madras called "The Madras Stock Exchange". "The Madras Stock Exchange Association Pvt. Ltd." was established in the year 1941. On 29th April 1959, it was reorganized as a company limited by guarantee under the name and style of "Madras Stock Exchange" (MSE). The Lahore Stock Exchange was formed in the year 1934. However in the year 1936 after the Punjab Stock Exchange Ltd. came into existence, the Lahore Stock Exchange merged with it. In Calcutta, a second Stock Exchange by name "The Bengal Share & Stock Exchange Ltd." was established in the year 1937 and likewise once again in the year 1938, Bombay also witnessed a rival Stock Exchange formed in the name of "Indian Stock Exchange Ltd". The U.P. Stock Exchange was formed in Kanpur and the Nagpur Stock Exchange Ltd. in Nagpur in the year 1940. The Hyderabad Stock Exchange Ltd. was incorporated in the year 1944. Two stock exchanges which came into being in Delhi by the name "The Delhi Stock & Share Brokers Association Ltd." and "The Delhi Stocks & Shares Exchange Association Ltd." were

amalgamated into "The Delhi Stock Exchange Association Ltd." in the year 1947. Subsequently the Bangalore Stock Exchange was registered in the year 1957 and recognized in the year 1963. The third stock exchange in the state of Gujarat the "Vadodara Stock Exchange Ltd." was incorporated in 1990. The Over the Counter Exchange of India (OTCEI) broadly based on the lines of NASDAQ (National Association of Securities Dealers Automated Quotation) of the USA was promoted and approved on August 1989. The National Stock Exchange of India Ltd. was incorporated in November 1992. Today there are 23 Stock Exchanges in India, including the 2 Stock Exchanges in Mumbai - Bombay Stock Exchange (BSE) and National Stock Exchange (NSE). Bombay Stock Exchange (BSE) was the major exchange in India till 1994.National Stock Exchange (NSE) started operations in 1994.

Stock Market Volatility

The relative rate at which the price of a security moves up and down, If the price of a stock moves up and down rapidly over short time periods, it has high volatility. If the price almost never changes, it has low volatility. Stock market volatility is significant and understanding it is imperative to investing in stocks that suit your investment or trading style and risk tolerance level. Stock prices rarely move in a straight line. Most of the time they move up and down and, some of the time, they trend higher or lower. More volatile stocks tend to chop more intensively and have a larger high-low range than their less-volatile cousins. Some short-term traders prefer to trade volatile stocks because they can make an impressive profit quickly, while conservative longer-term investors usually like to stay away from volatile securities.

Indian capital market has grown exponentially in the last few years. Volatility in the capital market is quite high, intraday volatility is large, especially at market opening and closing. Volatility is standard deviation of returns, which measures the dispersion of returns from the average. Volatility indicates the range of a return's movement. If volatility is large it means that there is wide range of fluctuations in the return and vice-versa. Volatility is the most basic statistical risk measure. It can be used to measure the market risk of a single instrument or an entire portfolio of instruments. While volatility can be expressed in different ways, statistically, volatility of a random variable is its standard deviation, in day-to-day practice, volatility is calculated for all sorts of random financial variables such as stock returns, interest rates, the market value of a portfolio, etc.

Stock return volatility measures the random variability of the stock returns. Stock returns volatility is the variation of the stock returns in time. It is the standard deviation of daily stock returns around the mean value and the stock market volatility is the return volatility of the aggregate market portfolio.

Stock prices are changed every day by the market. Buyers and sellers cause prices to change as they decide how valuable each stock is. Basically, share prices change because of supply and demand. If more people want to buy a stock than sell it - the price moves up. Conversely, if more people want to sell a stock, there would be more supply (sellers) than demand (buyers) - the price would start to fall. Volatility in the stock return is an integral part of stock market with the alternating bull and bear phases. In the bullish market, the share prices soar high and in the bearish market share prices fall down and these ups and downs determine the return and volatility of the stock market. Volatility is a symptom of a highly liquid stock

A stock market or equity market is a public (a loose network of economic transactions, not a physical facility or discrete) entity for the trading of company stocks and derivatives at an agreed price; these are securities listed on a stock exchange as well as those only traded privately.

The stock market is one of the most important sources for companies to raise money. This allows businesses to be publicly traded, or raise additional financial capital for expansion by selling shares of ownership of the company in a public market. The liquidity that an exchange provides affords investors the ability to quickly and easily sell securities. This is an attractive feature of investing in stocks, compared to other less liquid investments such as real estate.

Derivative Trading on Stock Market Volatility

The stock market is considered to be volatile when there is sharp rise and sharp decline in the markets within a short span of time. Stock market volatility has been a cause of concern for policy makers as well as for investors not only in India, but also throughout the world. An investor would like to know how much volatility or risk he or she is exposed to, as more volatile a stock is, the more risky it is. The most desired instruments that allow market participants to manage risk in the modern securities trading are known as derivatives. The main logic behind the derivatives trading is that derivatives reduce the risk by providing an additional channel to invest with lower trading cost and it facilitates the investors to extend their settlement through the future contracts. It provides extra liquidity in the stock market. They represent contracts whose payoff at expiration is determined by the price of the underlying asset. Derivatives include Futures, Forwards, Options and Swaps, and these can be combined with each other

or traditional securities and loans to create hybrid instruments. Derivative products like Futures and Options on Indian stock markets have become important instruments of price discovery, portfolio diversification and risk hedging in recent times.

Introduction of derivatives in the Indian Capital Market was initiated by the Government following L .C. Gupta Committee Report on derivatives in December 1997. The report suggested the introduction of Stock Index Futures in the first place to be followed by other products, once the market matures. Following the recommendations and pursuing the integration policy, BSE was the first stock exchange in the country to start trading in Index Futures based on BSE Sensex on June 9, 2000. NSE also commenced its trading on 12 June, 2000 based on S&P Nifty. Subsequently, other products like Stock Futures on individual securities were introduced in November 2001. This was followed by approval of trading in Index Options based on these two indices and Options on individual securities. The volumes in derivatives market especially on the Futures and Options segment of the NSE witnessed a tremendous increase and now the turnover is much higher than the turnover in the cash markets. Till today, there are only four derivatives instruments available in the Indian markets, namely, Index Futures, Index Options, Stock Futures and Stock Options.

Review of literature

Various studies have been conducted to assess the impact of derivatives trading on the stock market throughout the globe. Some of the important contributions are as follow:

Gupta (2002) has examined the impact of introduction of Index Futures on stock market volatility. Further, he has also examined the relative volatility of Spot market and Futures market. Raju and Karande (2003) studied price discovery and volatility in the context of introduction of Nifty Futures at the National Stock Exchange (NSE) in June 2000. Shenbagaraman (2003) examined the impacts of the introduction of the derivatives contracts such as Nifty Futures and Options contracts on the underlying Spot market volatility have been examined using a model that captures the heteroskedasticity in returns.

Objective of the study

The present study examines the impact of derivatives trading on the stock market volatility.

Derivatives market in India

Indian stock market provides various kinds of derivative instruments to investors and it may be traded for a variety of reasons. It enables a trader to hedge some pre-existing risk by taking positions in

derivatives markets that offset potential losses in the underlying or Spot market. In India, most derivatives users describe themselves as hedgers and Indian laws generally require that derivatives be used for hedging purposes only. Another motive for derivatives trading is speculation (i.e. taking positions to profit from anticipated price movements). In practice, it may be difficult to distinguish whether a particular trade was for hedging or speculation, and active markets require the participation of both hedgers and speculators.

Derivatives Instruments Traded in India

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. Derivatives on stock indexes and individual stocks have grown rapidly since inception. In particular, single stock futures have become equally popular to the index futures. In fact, NSE has the highest volume (i.e. number of contracts traded) in the single stock futures globally, enabling it to highest rank holder among world exchanges at point of time. While single stock options were less popular than stock futures, they have witnessed a high growth rate since starting of 2011 after they were changed to European style. On the other hand, index options are hugely popular than index futures. Now a days, index options turnover share the 2/3rd of the total F&O turnover. NSE launched interest rate futures in 2009 on 10 Year Notional Coupon-bearing Govt. of India Security & the recently introduced (2011) 91-day Govt. of India T-Bill; but in contrast to equity derivatives, there has been little trading in them. This particular segment is still in its nascent stage.

Regulators permitted the exchanges to launch currency derivatives contracts to start with USDINR currency pair in 2nd half of 2008. Later on three more currency pairs EURINR, GBPINR & JPYINR is allowed in Feb. 2010. Currency options contracts were launched on Oct. 29th 2010 on USDINR only & so far now this is the only option contract available in the segment. Since its launch forex derivatives have seen continuous activity & rising trading volumes than interest rate derivatives and any other segments. Exchange-traded commodity derivatives have been allowed for trading only since April 2003. The number of commodities eligible for futures trading is 109 by 2011 on 21 recognized exchanges. Of all the commodities, bullion contracts shares 40.75%, most of the total turnover. Among all exchanges, MCX enjoys the biggest share of turnover of more than 82% of the total traded value.

Conclusion

In India, trading in derivatives started in June 2000 with the launch of futures contracts in the BSE Sensex and the S&P CNX Nifty Index on the Bombay Stock Exchange (BSE) and National Stock Exchange (NSE), respectively. Options trading commenced in June 2001 in the Indian market. Since then, the futures and options (F&O) segment has been growing continuously in terms of new products, contracts, traded volume and value. At present, the NSE has established itself as the market leader in this segment in India, with more than 99.5 percent market share (NSE Fact Book, 2006, p. 85). The F&O segment of the NSE outperformed the cash market segment with an average daily turnover of Rs291.91 billion, as compared to Rs114.79 billion in the cash segment from 2006 to 2007 (Derivatives Updates on NSE website, www.nseindia.com, 2007). This shows the importance of derivatives in the capital market sector of the economy. In the study, it was attempted to estimate the volatility implications of the introduction of derivatives on the cash market. Through this study, we seek evidence regarding whether the listing of futures and options lead to any significant change in the volatility of the stock market in India.

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