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## **IMPACT OF EQUITY ON STOCK MARKET'S VOLATILITY**

# Impact of Equity on Stock Market's Volatility

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**Abstract – Regarding the impact of equity on the return and volatility of underlying stock market, the study revealed that there is a significant increase in return after the introduction of index futures in S&P CNX Nifty. However, this effect disappeared after the introduction of index options. It means price reversal was found only for a while after the introduction of derivatives and the market came again in equilibrium after getting depth in equity market. In case of individual stocks, majority of the stocks showed no significant difference in the return after the introduction of stock equity.**

**Key Words:** Equity, Significant Increase, Equilibrium.

## INTRODUCTION

Financial Market liberalization since early 1990's has brought about major changes in the financial market in India. The creation and empowerment of Securities Exchange Board of India (SEBI) has helped in proceeding higher-level accountabilities in the market. New Institutions like National Stock Exchange of India Ltd. (NSEIL), National Securities Depository Ltd. (NSDL), and National Securities Clearance Corporation (NSCCL) have been the change agents and helped in bringing transparency and providing safety to investing public at large with modern technology in hand. Microstructure changes like introduction of screen based trading, rolling settlement, Dematerialization of securities in stock markets have brought about reduction in transaction cost and that has helped investors to lock in a deal faster and cheaper. The pursued reform process has helped to improve efficiency in information dissemination, enhancing transparency, prohibiting unfair trade practices like insider trading and price rigging.

## REVIEW OF LITERATURE

The first organized commodity exchange came in existence in the early 1700s in Japan. The first formal commodity exchange, the Central Board of Trade (CBOT), was formed in 1848, in the US to deal with the problem of credit risk and to provide centralized location to negotiate forward contracts. And it gave an idea to introduce commodity 'futures'. In 1865, CBOT listed the first 'exchange traded derivatives' contracts, known as the futures contracts. Futures trading grew out of the need for hedging the price risk involved in many commercial operations. The Chicago Mercantile Exchange (CME), a spin-off of CBOT, was formed in 1919, though it did exist before 1874 under the names of 'Chicago Produce Exchange' and Chicago Butter

and Egg Board'. The first financial futures to emerge were the currency futures in 1972 in the U.S. The first foreign currency futures contracts were traded on May 16, 1972, on the International Money Market (IMM), a division of CME. The currency futures traded on the IMM are the British pound, the Canadian dollar, the Japanese yen, the Swiss franc, the German Mark, the Australian dollar and the Euro dollar. Currency futures were followed soon by interest rate futures. Interest rate futures contracts were traded for the first time on the CBOT on October 20, 1975. Stock index futures and options emerged in 1982. The first stock index futures contracts were traded on Kansas City Board of Trade on February 24, 1982.

The first of the several networks, which offered a trading link between two exchanges, was formed between the Singapore International Monetary Exchange (SIMEX) and the CME on September 1984.

Options are as old as futures. Their history also dates back to ancient Greece and Rome. The first account of options and its creator, Thales, was published in Aristotle's 'Politics', in 332 BC. Thales used a small amount of money to secure the right to sell olive presses during harvest season. During olive-picking time, he sold options for a great deal more than he paid for them.

Options were very popular with speculators in the Tulip craze of seventeenth century in Holland. Tulips, the brightly colored flowers, were a symbol of affluence. Owing to a high demand, tulip pulp prices shot up. Dutch growers and dealers traded in tulip pulp options. There was so much speculation that people even mortgaged their homes and businesses. These speculators were wiped out when the tulip

craze collapsed in 1637, as there was no mechanism to guarantee the performance of the option terms.

An American financier, Russel Sage, invented the first call and put options in 1872. These options were traded over the counter. Agricultural commodity options were traded in the nineteenth century in England and US. Options on shares were available in the US on the Over-The-Counter (OTC) market only until 1973 without much knowledge of valuation. A group of firms known as Put and Call brokers and Dealers' Association was set up in early 1900s to provide a mechanism for bringing buyers and sellers together.

On April 26, 1973, the Chicago Board Options Exchange (CBOE) was set up at CBOT for the purpose of trading stock options. It was in 1973 again that Black, Merton and Scholes invented the famous Black-Scholes Option formula. This model helped in assessing the fair price of an option, which led to an increased interest in trading of options. With the options market becoming increasingly popular, the American Stock Exchange (AMEX) and the Philadelphia Stock Exchange (PHLX) began trading in options in 1975.

The market for futures and options grew at a rapid pace in the eighties and nineties. The collapse of the Bretton Woods regime of fixed parities and the introduction of floating rates for currencies in the international financial markets paved the way for development of a number of financial derivatives, which served as a risk management tools to cope with market uncertainties.

## MATERIAL AND METHOD

About the impact of macro news on stocks returns which was analyzed by using the GARCH technique, the study has shown that the past news as well as the recent news have a significant bearing on the volatility. However, the effect of the historical information is found higher than that of the past news. It refers that shocks to conditional variance take a long time to die out in Indian stock market. However, the impact of recent news as measured by ARCH (1) has increased after the introduction of index futures in Indian stock market. It means the information is quickly disseminated and quality of information has improved in the market in post derivatives period.

The investigations further showed that there is no significant difference in return in case of Nifty & 17 stocks on expiration day of derivatives contracts. It means no price reversal has been found on the expiration of derivatives contracts in case of majority of stocks. It also implies that the price reversals might occur during intraday trading but when the market closes on expiration days, it is again in equilibrium. Therefore, it can be concluded that, derivatives introduction and expiration do not have a significant bearing on the return of underlying stocks.

The empirical results relating to impact of index derivatives on the volatility of Nifty as measured by GARCH (1, 1) model have indicated a significant reduction in volatility after the introduction of index futures and options. When both of the events, i.e., introduction of options and futures considered simultaneously in the variance equation, the coefficients of index futures and index options give evidence that the volatility of S&P CNX Nifty as a whole declined after the introduction of index derivatives. However, the coefficients of these variables are low and are significant only in case of index futures. It means the volatility of S&P CNX Nifty declined marginally after the introduction of index derivatives.

The analysis relating to individual stocks revealed that Nifty is a significant factor for predicting the return on individual stocks. The results further indicated that all of the stocks under study have shown a decreasing trend in volatility after the introduction of stock options. But the reduction in volatility found statistically significant in case of 19 stocks. Thus, the stock futures and options have helped the market in reduction of volatility.

## CONCLUSION

As far as the impact of equity on marketability of underlying stocks is concerned, the turnover of the market showed an average daily growth of Rs. 7.62620 crore against the growth of Rs. 5.339886 crore in earlier period but there have been greater fluctuations in volume after the introduction of derivatives. These deviations, however, were not significant.

The annual growth rates of trading volume of cash market for the period from January 1998 to May 2000, June 2000 to February 2001 and from July 2001 to December 2006 are 59.65, 33.21 and 27.62 respectively. It implies that the growth in turnover of cash market was comparatively higher in pre-derivatives period. However, there is no significant difference in compound growth rate when the turnover of the derivatives market and cash market considered combinedly. In this case, the growth rates in turnover during pre derivatives and equity periods were 61.56 and 58.2 percent respectively.

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