"STOCK MARKET VOLATILITY – A STUDY OF INDIAN STOCK EXCHANGE"

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Abstract

Stock exchange is one of the foremost versatile sectors within the economic system, and stock market plays an important role in economic development. stock market could also be a hub where facilities are provided to the investors to urge and sell their Shares, Bonds and Debenture etc. In other words, stock market could also be a platform for trading various securities and derivatives with none barriers. available Market various companies are listed to their business venture through public issues. within the present scenario, future investors are investing within the businesses through stock market to realize profit. In India listed stock exchange are Bombay stock market (BSE), the National stock exchange (NSE) and thus the Calcutta stock exchange (CSE). These three are largest Indian stock market. Volatility could also be a statistical measure of the dispersion of returns for a given security or Market Index. Commonly, the upper the volatility greater the danger associated with the security. Volatility estimation is significant for several reasons associated with different people within the market. Developed markets still provide over long period of some time with higher returns constituting low volatility. "Indian market has started ending up being instructive more efficient diverged from made countries."The examination would encourage the peruse to know the past, current and future parts of Indian stock trade.

KEYWORDS*: Shares, Indian stock market, BSE, NSE, Volatility etc.*

INTRODUCTION

Volatility is a term in the stock market which has its concern for everyone who is interested to invest in the stock market. In India, stock market is affected by globalized factors as well as the domestic factors also. These factors make the market volatile and which in turn has its influence on the returns of the stock price. Returns of stock significantly affected by the fluctuations of the market. In the current time of progression, privatization and globalization, the worldwide speculations and expansion of portfolio universally is a significant issue, particularly in the timeframe when securities exchanges are exceptionally unpredictable. Regularly, individuals put resources into the securities exchange to gain returns. A speculator plans his portfolio where he remembers various stocks or gathering of stock for organization oral premise to accomplish his motivation of most extreme comes back with least hazard. International diversification can be an option as rationale behind this is that stock returns within a county can be highly correlated because of similar environment but internationally conditions can be different. The present study seeks into the behaviour of Indian stock market and interdependence of 251 Indian stock market and International stock markets. The objectives of the study are as follows:

1. To see the stock market volatility patterns in Indian stock market and behaviour of volatility after the introduction of derivatives.

2. To study the stock price movements to show that any trend or movements in the market are interdependent and to understand the weak form efficiency of the Indian stock market.

3. To identify the day-of-the-week effect and month-of-the-year effect in the Indian stock market.

4. To investigate and compare the stock returns and volatility behaviour of the Indian stock

market as compared to International stock markets.

The present study is based on the four major indices of Indian stock market i.e. SENSEX, and BSE100 of Bombay Stock Exchange, while NIFTY and CNX500 of National Stock Exchange. The daily closing prices of the four indices is taken for the period of the study. To see the inter-dependence of Indian stock market with international, Brazil, Russia, India and China are selected as emerging economies and seven developed economies named as USA, UK, Australia, Japan, Germany, Hongkong stock market and Singapore are taken to understand their behaviour. The data for India stock market is collected from the official websites of National Stock Exchange and Bombay Stock Exchange i.e. www.nseindia.com and www.bseindia.com. The data of other countries is collected from www.moneycontrol.com, www.allstocks.com and www.yahoofinance.com.

STOCK MARKET - AT INDIAN PERSPECTIVE

"The possibility of protections trades came to India in 1875, when Bombay stock exchange (BSE) was developed as 'The Native Share and Stockbrokers Associationa voluntary non-pro t making association. We all know it, the Bhaji (Sabji) market in your neighbourhood could also be an area where vegetables are bought and sold. Like Bhaji (Sabji) market, a stock market as a neighbourhood where stocks shares are bought and sold. The stock exchange determines the day's price for a stock through a process of bid and offer. you've right to bid and buy a stock shares and offer to sell the stock shares at a valuable price. Buyers compete with each other for the only bid and got their highest price quoted to urge a selected stock market Shares.Additionally, venders contend with one another at the most reduced cost cited to sell the stock. When a match is made between the only bid and thus the simplest offer a trade is executed. In automated exchanges high-speed computers do that entire job. Stocks of various companies are listed on stock exchanges. Presently there are 23 stock markets In India. The Bombay stock exchange (BSE), the National stock exchange (NSE) and thus the Calcutta stock exchange (CSE) are the three large stock exchanges.There are numerous little local trades situated in state capitals and other significant urban communities.

HISTORICAL EVOLUTION OF INDIAN STOCK EXCHANGE

As already stated, the Indian Stock markets have played a big role within the first attempts at industrialization in India within the late nineteenth and early twentieth centuries. the primary textile mills and thus the remainder steel plants were funded within the stock market. variety of those capital raising exercises were large in regard to the size of the financial sector in those days.Starting inside the late fifties, the nation started an internal looking communist model of improvement that tried to put the directing statures of the economy inside the hands of the general open division. The state took control of the allocation of resources within the economy because the banks and insurance companies were nationalized and development financial institutions grew in importance. A regime of monetary repression came into being and thus the stock market stagnated.

The period from 1984 to 1992 was in some ways the water line of the New Delhi markets. because the markets responded enthusiastically to the remainder whiff of reforms within the mid-1980s and to the most reform initiative of 1991, the stock market soared through the roof. From October 1984 to September 1992, the stock market index went up quite ten times representing an annual compound return of 34per cent.

REVIEW OF LITERATURE

According to “Debjit Chakraborty” (1997) in his study attempts to work out a relationship between major economic indicators and stock market behaviour. It also analyses the stock market reactions to changes within the economic climate. The factors considered are in action, funds, and growth in GDP, scal de cit and credit

deposit ratio. To and therefore the trend within the stock markets, the BSE National Index of Equity Prices (Natex) which comprises 100 companies was taken because the index. The study shows that stock market movements are largely in uenced by, broad funds, in action, C/D ratio and scal de cit apart from political stability.

According to "Redel" (1997) targeting the capital market integration in developing Asia during the amount 1970 to 1994 taking into variables like net capital owes, FDI, portfolio equity owes and bond owes.He saw that capital market combination in Asian creating nations inside the 1990 s was an outcome of wide based monetary changes, particularly inside the exchange and budgetary divisions,which is that the basic explanation behind financial emergencies which followed the expanded capital market coordination inside the 1970s in numerous nations won't be rehashed inside the 1990s. He concluded that deepening and strengthening the method of economic liberalization within the Asian developing countries is important for minimizing the risks and maximizing the bene ts from increased international capital market integration.

According to "Avijit Banerjee" (1998) reviewed Fundamental Analysis and Technical Analysis to research the worthiness of the individual securities needed to be acquired for portfolio construction. Technical Analysis detects the foremost appropriate time to shop for or sell the stock. It aims to avoid the pitfalls of wrong timing within the investment decisions. He also stated that the fashionable portfolio literature suggests 'beta' value P because the most acceptable measure of risk of scrip. The securities having low P should be selected for constructing a portfolio so as to attenuate the risks.

According to "Madhusudan" (1998) found that BSE sensitivity and national indices didn't follow stochastic process by using correlation analysis on monthly stock returns data over the amount January 1981 to December 1992.

As indicated by "Arun Jethmalani" (1999) assessed the presence and estimation of hazard engaged with putting resources into corporate protections of offers and debentures. He commended that risk is typically determined, supported the likely variance of returns. it's more difficult to match 80 risks within an equivalent class of investments. he's of the opinion that the investors accept the danger measurement made by the credit rating agencies, but it had been questioned after the Asian crisis. He concluded his article by commenting that risk isn't measurable or quanti able. But risk is calculated on the idea of historic volatility. Returns are proportional to the risks, and investments should be supported the investors' ability in touch the risks, he advised.

According to "Suresh G Lalwani"(1999) emphasized the necessity for risk management within the stock exchange with particular emphasis on the worth risk. He commented that the stock exchange may be a 'vicious animal' and there's quite a good chance that far away from improving, things could deteriorate.

According to "Nath and Verma" (2003) examine the interdependence of the three major stock exchange s in south Asia stock market indices namely India (NSE-Nifty) Taiwan (Taiex) and Singapore (STI) by employing bivariate and multivariate co integration analysis to model the linkages among the stock markets, No co - integration was found for the whole period (daily data from January 1994 to November 2002).They concluded that there's no end of the day equilibrium.

According to "Bhanu Pant andDr.T.R.Bishnoy" (2001) separated the lead of the step by step and without fail returns of positive Indian stock exchange records for stochastic technique during April 1996 to June 2001.They found that Indian stock trade Indices didn't follow stochastic procedure.

According to "Juhi Ahuja" (2012) presents a review of New Delhi Market & its structure. In last decade approximately, it's been observed

that there has been a paradigm shift in New Delhi market. the appliance of the many reforms & developments in New Delhi market has made the New Delhi market comparable the international capital markets.Presently, the market includes a created administrative component and a contemporary market framework with developing business sector capitalisation, showcase liquidity, and activation of assets. The emergence of personal Corporate Debt market is additionally an honest innovation replacing the banking mode of corporate finance. However, the market has witnessed its worst time with the recent global financial crisis that originated from the US sub-prime mortgage market and cover to the whole world as a contagion.The capital market of India conveyed a drowsy exhibition.

OBJECTIVES OF THE STUDY

1. to review the causes of volatility in Indian stock exchange.

2. to review the varied aspects of Indian stock exchange intimately.

3. to review the measures are adopted to regulate volatility.

RESEARCH METHODOLOGY

Data Collection: This study is predicated on secondary data. The required data associated with Indian stock exchange, Bombay stock exchange (BSE), National stock exchange (NSE) are collected from various sources i.e. Bulletins of Federal Reserve Bank of India, publications from Ministry of Commerce, SEBI Handbook of Statistics, Govt. of India. CNX Nifty data is down loaded from the websites of NSE. Daily closing index value are taken and averaged to urge the index value for every year, which is taken into account as more representative gure of index for the whole year rather anybody days/month closing gure of the index.

CAUSES OF VOLATILITY IN INDIAN STOCK EXCHANGE

The stock exchange volatility is caused by number of things like change in in aition rate, rate of interest, financial leverage, corporate earnings; dividends yield policies, bonds prices and lots of other macroeconomic, social and political variables like international trends, economic cycle, economic process, budget, general business conditions, credit policy etc. Volatility is driven by trading volume followed by arrival of latest information regarding new oats, or any quite private information that incorporate into market stock prices.

Amongst the literature of most relevance to the entire volatility issues is Market Volatility of Robert Shiller (1990). Shiller may be a rm advocate of the favoured model explanation of stock exchange volatility. the favoured models are a qualitative explanation of price fluctuations. In short, it proposes that investor reactions, thanks to psychological or sociological beliefs, exert an excellent in influence on the market than good economic sense arguments.Low unpredictability is favoured on the grounds that it diminishes superfluous hazard borne by financial specialists in this way empowers showcase dealers to sell their benefits without huge value developments.

It is important to estimate volatility since volatility may be a key parameter utilized in many financial applications, from derivatives valuation to asset management and risk management. Volatility measures the dimensions of the errors made in modelling returns and other financial variables. it had been discovered that, for vast classes of models, the typical size of volatility isn't constant but changes with time and is predictable.

Volatility of returns in financial markets are often a serious obstacle for attracting investment in small developing economies. High returns and low level of volatility is taken to be a symbol of a developed market. India with long history and China with short history, both provide as high a return because the US and therefore the UK market could provide but the volatility in both countries is higher.

There are variety of other things that cause volatility. Amongst other things that because volatility is arbitrage. Arbitrage is that the simultaneous or almost simultaneous buying and selling of an asset to profit from price discrepancies. Arbitrage causes markets to regulate prices quickly.This has the effect of making data be all the more immediately acclimatized into advertise costs. this is often a curious result because arbitrage requires no more information than the existence of a price discrepancy.

The quicker data is dispersed, the faster markets can respond to both negative and positive news. Improved trading technology makes it easier to require advantage of arbitrage opportunities, and therefore the resulting price alignment arbitrage causes. Finally, more sorts of financial instruments allow investors more opportunity to makeover their money to more sorts of investment positions when conditions change.

Speculation: one more reason for market volatility is theory. Speculation is that the act ofexchanging a benefit, or directing a budgetary exchange, that conveys noteworthy danger of losing most or the entirety of the underlying cost, in desire for an extensive addition. This involves buying and selling of financial instrument and make money from the anticipated price fluctuation.Hypothesis causes deviation of value structure their natural worth.

The volatility on the stock exchanges could also be thought of as having two components:

1. The volatility arising thanks to information-based price changes; and

2. Volatility arising thanks to noise trading/speculative trading, i.e., destabilizing volatility.

Participants in financial markets could also be real investors or they'll be speculators. Real investors invest on the idea of fundamental factors but speculators speculate on short run price changes to form early profits. it's often difficult to spot the character of transaction as a hedge or speculative transaction. generally, speculative activities have a serious role in destabilizing the stock markets. Volatility thanks to speculators may take alarming proportions.

Both hedgers and speculators are interested in the futures exchange, which trade on the idea of their expectations of the longer-term price movements within the derivatives also because the underlying market. There are connecting views regarding the impact of futures contracts on volatility of commodity exchange. Many studies are made to and out the impact of futures on volatility. Studies have shown mixed results. Some studies have reported a rise in volatility and a few reports decrease or either no effect on volatility.

Theoretically, what effect the trading of derivatives may need on the underlying market dependents largely on the assumptions that we make about the market participants. one among the key assumptions relates to the power of the futures contracts to draw in either the more informed or uninformed traders to the market.

MEASURES are ADOPTED to regulate VOLATILITY

The following measures are adopted to regulate volatility:

Circuit Breakers

ACircular Breakers is an exchanging gadget that interferes with the irregular or deficiency flow. It is a mechanical gadget that upsets the progression of high extent (issue) current and in increases plays out the capacity of a switch. The electrical switch is fundamentally intended for shutting or opening of an electrical circuit, in this manner shields the electrical framework from harm.

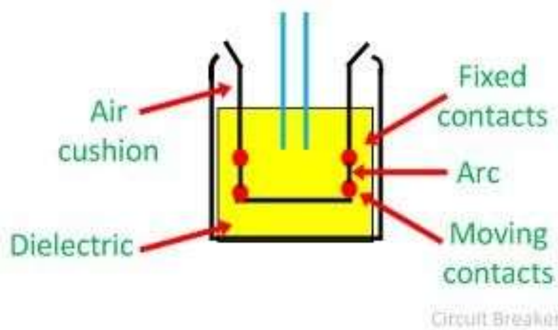
Working Principle of Circuit Breaker

Circuit breakerbasically comprises of fixed and moving contacts. These contacts are contacting one another and conveying the current under typical conditions when the circuit is shut.Exactly when the electrical switch is closed, the stream passing on contacts, called the cathodes,

associated each other under the heaviness of a spring.

During the ordinary working condition, the arms of the electrical switch can be opened or shut for an exchanging and support of the framework. To open the electrical switch, just a weight is required to be applied to a trigger.

At whatever point an issue happens on any piece of the framework, the outing loop of the breaker gets invigorated and the moving contacts are getting separated from one another by some instrument, consequently opening the circuit.



Pre-Trading Session

The pre-open meeting is for a length of 15 minutes for example from 9:00 am to 9:15 am. The pre-open meeting is involved Order assortment period and request coordinating period. The value band appropriate for preopen meeting is 20%.

The order collection period of 8 minutes shall be provided for order entry, modification and cancellation. (* - System driven random closure between 7th and 8th minute).During this period requests can be entered, adjusted and dropped.*

The data like Indicative balance/opening cost of scrip, complete purchase and sell amount of the scrip is spread on the NEAT Terminal to the individuals on constant premise.

Demonstrative NIFTY Index esteem and % change of characteristic balance cost to past close cost are figured dependent on the requests all together book and are dispersed during pre-open meeting.

Request coordinating period begins following fruition of request assortment period. Requests are coordinated at a solitary (harmony) value which will be open cost. The request coordinating occurs in the accompanying grouping:

- *Eligible breaking point orders are coordinated with qualified cut off orders*
- *Residual qualified breaking point orders are coordinated with advertise orders*
- *Market orders are coordinated with advertise orders*

Increment in Market Timing (Trading Hours)

By and by, the trade exchanged value subsidiaries showcase is open from 9:55 am to 3:30 pm and the market timings are co-end with those of the fundamental money advertise. While trade exchanged cash subsidiaries showcase works from 9:00 am to 5:00 pm, trade exchanged product fates advertise works from 8:00 am till 11:30 pm. A correlation of market timings of different items/markets is given in Market timings of different items/showcases in India Product/Market Timing Cash Market 9:55 am to 3:30 pm Equity Derivatives 9:55 am to 3:30 pm Currency Derivatives 9:00 am to 5:00 pm Commodity Derivatives 8:00 am to 11:30 pm Power Exchange 10:00 am to 12:00 early afternoon.

Product / Market	Timing
Cash Market	9:55 am to 3:30 pm
Equity Derivatives	9:55 am to 3:30 pm
Currency Derivatives	9:00 am to 5:00 pm
Commodity Derivatives	8:00 am to 11:30 pm
Power Exchange	10:00 am to 12:00 noon

Market timings of varied products / markets in India

Aside from increment in showcase timings, to Aside from increment in showcase timings, to control instability, conversations additionally are occurring to remain markets open for six days consistently rather than 5, Saturday being suspected upon to be considered as exchanging day. at the current markets are open from Monday to Friday. the information which collects after the end of exchanging meeting on Friday is reflected in costs when markets revive on Monday. Accordingly, the fluctuation of profits shows a bowed to broaden. In this manner, to weaken such effect, it's being considered to extend the trading days from 5 days at the present to six days.

CONCLUSION

Stock Market is that the mitigation of risk through the spreading of investments across multiple entities, which is achieved by the pooling of variety of small investments into an outsized bucket. stock exchange is that the best suited investment for the commoner because it offers a chance to take a position during a diversified, professionally managed portfolio at a comparatively low cost. The review of literature has delivered to light that:

1. *Enlistment of corporate securities in additional than one stock market at an equivalent time improves liquidity of securities and functioning of stock market.*
2. *There is existence of untamed speculation within the Indian stock exchange.*
3. *Risk isn't measurable or quanta able. But risk is calculated on the idea of historic volatility.*
4. *Stock market movements are largely in influenced by, broad money supply, in ation, C/D ratio and scal de cit aside from political stability.*
5. *Low execution costs make the derivatives especially futures, very suitable for frequent and short-term trading to manage risk, more effectively.*

The analysis of the stock exchange cycles shows that generally over the reference period the bull phases are longer, the amplitude of bull phases is higher and therefore the volatility in bull phases is additionally higher. The gains during expansions are larger than the losses during the bear phases of the stock exchange cycles. The bull introduce comparison with its pre liberalization character is more stable within the post liberalization phase. The results of our analysis also show that the stock exchange cycles have dampened within the recent past. Volatility has declined within the post liberalization phase for both the bull and bear phase of the stock exchange cycle.

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