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Factors Affecting Volatility in Indian Stock Market

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Abstract

This paper aims to provide an overview about main reasons responsible for unpredictability in the performance of stock market of India and the measures taken by government and financial regulatory bodies to control these factors. The stock market provides for mobilization and allocation of savings in an efficient manner. Due to globalization, stock markets play an important role in the development of economies. Various factors increase the level of risk and uncertainty faced by the stock markets due to which stock markets often experience fluctuations. Therefore, measurement of volatility of the stock market returns becomes necessary to decrease this uncertainty. Simply put, volatility is the extent to which the price of the security or asset changes with returns. It measures the level of risk associated with the price fluctuations of a security. Standard deviation of annual returns over a period of time is calculated in order to estimate volatility. Higher the volatility, higher is the risk in security and vice versa. There are number of factors which cause volatility in stock market like rate of inflation, economic crisis, social and political factors, changes in economic policy, economic indicators etc. To control the impact caused by these factors various steps are taken like margin trading, pre open sessions, price bands, circuit breakers etc.

Keywords: Volatility, Stock Market, Circuit Breaker, Price Band, Security

1. INTRODUCTION

Stock market acts as a long term lubricant in the economic growth process, thus an important measure for measuring a country's economic strength and development. The stock market serves as a channel through which savings are mobilized and efficiently allocated to achieve economic growth (Alile, 1984). Due to economic globalization the role of stock markets in the development of economies underwent a major change as development of stock market is the integral part of the process of globalization. Many observations from researchers suggest that major source for raising finance for Indian companies is Indian stock markets. Their importance in financing the corporate sector increased manifold. By issuing shares and stocks, industries can easily pool huge amount of resources for long term for expansion and research purposes. Now the function of stock exchanges is not limited to trading of securities but they are considered an important source of capital formation, improving resource allocation and enhancing possibilities economic growth in long run. They also help in disciplining the management of the company. Therefore, the overall progress and growth of the country and economy depends upon the success and performance of the stock market. For this reason understanding the reasons for instability in stock market has been a matter of apprehension to policy makers and financial analysts. They are concerned for identifying the main determinants of volatility and spillover effects. There are many factors which affect stock prices directly or indirectly like interest rate, money supply, dividends, GDP etc.

Due to economic globalization, the stock market often experiences fluctuations due to worldwide economic crunch. The normal operations of the stock market hamper due to these fluctuations as it increases the level of risk and uncertainty faced by the stock markets. In order to decrease this uncertainty, it becomes important to measure the volatility of the stock market returns. And to measure the volatility accurately it becomes important to have knowledge about this concept. Volatility has become one of the most discussed issues in both financial and economic research. It is one of the most important features of stock market which impacts the investment decisions of investors both individual and institutional.

Volatility in simple words refers to degree of fluctuation in security's price or asset's price for the given set of returns. It measures the level of risk associated with the price fluctuations of a security. By calculating the standard deviation of

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annual returns over a period of time volatility can be estimated. Volatility of stock market is influenced by a large number of factors. In this paper the main factors responsible for volatility in Indian stock market and the steps taken to control these factors have been discussed.

OBJECTIVES OF THE STUDY

1. To study the causes of volatility in Indian Stock Market.
2. To study the various aspects of Indian Stock Market in detail

2. LITERATURE REVIEW

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1. To study the causes of volatility in Indian Stock Market.
2. To study the various aspects of Indian Stock Market in detail.
3. To study the measures have been adopted to control volatility.

Chun, D., et,al. (2023) examined the various economic and financial factors leading to changes in volatility of in terms of a cross-country perspective. Extensive ranges of studies were reviewed in order to collect a set of variables for prediction. It was found that only few variables contained important predictive information. It was also discovered that movements of Chinese stock market significantly predicted volatility of US stock market.

Engelhardt, N. et.al. (2021) investigated the effect of trust on volatility of global stock market during COVID-19 pandemic. For the study sample of 47 stock markets was taken and it was found that in high trust countries the volatility is significantly low. Therefore, the trust in both the fellow citizens and government of the countries were considered of great importance.

Nesrine, Hamad et al. (2019) identified the manner in which fluctuations in stock market prices were impacted by the volatility in foreign exchange rate. The GARCH model was used for the analysis. The study covered two countries which belonged to MENA zone. Time period covered was 2002-2017. The study revealed that the main variables which impacted stock market in Tunisia were volatility in oil price, gold price and exchange rate. Whereas the main variables which effected stock market in Turkey in the mentioned time period were interest rate volatility, gold price volatility and exchange rate volatility.

Zubair and Aladejare (2017) investigated the relationship between fluctuations in Nigerian stock exchange (NSE) and exchange rate volatility using GARCH model. The data used in the study was obtained from Bank of Nigeria's Statistical Bulletin for the period 1980-2016. The study also included variables like GDP, interest rate, nominal exchange rate etc. It was concluded on the basis of study that the relationship between exchange rate volatility and stock market was very weak, but it was observed that other macroeconomic variables like inflation and GDP affected stock market. Weak volatility transmission pointed towards the increased utilization of hedging instruments by the firms listed on NSE.

Onasanya, Olanrewaju et al. (2012) examined the impact of various macro economic variables on movement of stock market. The variables used in the study included exchange rate, external debt, inflation rate etc. The time series annual data from 1985 to 2008 was used for the study. The various tests used for the study were Augmented Dickey Fuller Test, causality analysis, variance decomposition multivariate co integration test and vector error correction. It was found that there existed a long run relationship between the macro- economic variables used in the study and average stock prices. All macro – economic variables were insignificant but only External debt was significantly related to average stock price. Average share price and External debt were found to granger cause in pairs while an independent causality existed between the chosen macro – economic variable and average share price. This revealed that for the selected macro economic variables average share price was not the leading indicator.

Adaramola (2011) investigated the impact of various macroeconomic variables such as exchange rate, money supply, inflation rate, interest rate etc on share prices during 1985 to 2009 in Nigeria. The study was based on secondary data which included six macroeconomic variables and share prices of selected firms. To examine the impact of the selected macroeconomic variables on the share prices of the firms selected for study, the panel model was used. After analysis it

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was revealed that selected macroeconomic variables had varying but significant impact on the share prices of individual firms in Nigeria. The study showed with practical evidence that to forecast movement of share prices in Nigeria, trends in various macroeconomic variables can be used.

Olowe (2007) examined the dynamic equilibrium relationship between a group of macroeconomic variables and the Nigerian Stock Exchange index, using Johansen's (1991) vector error correction model The various variables used in the study included supply of money, industrial production index, oil prices, rates of treasury bill, consumer price index etc. It was found that there existed a co integrating relation between selected macroeconomic variables. Moreover the co integration relationship was also found to be consistent with previous studies, unlike the signs of some of the variables, which were contradictory with previous studies.

Varadharajan P & Vikkraman P (2011) inspected the influence of budget on unpredictability in the returns of stock market. The study was conducted on major four and the time period covered was ten years i.e., 2002 to 2011.The key objective of the study was to provide knowledge to the investors about volatility, so that they could invest vigilantly.

Khan A. A & Zia A (2019) investigated the impact of declaration of mergers of SBI and its associate banks on volatility of returns of stocks of SBI. The GARCH model was used for the study and the time period covered was 300 days (event window). Secondary data from reliable sources was used for the study. The results of the study confirmed that mergers and acquisitions were responsible for an increase in volatility in stock returns and that too in different ways.

Andrade & Sheriff (2018) investigated the behaviour of Indian stock market for short duration. The investigation revealed that the Indian stock market is highly volatile in short run and the same pattern of behaviour was shown by both BSE and NSE, two of the major stock exchanges of India.

Kaur (2004) examined the nature and characteristics of volatility in Indian stock market. The study revealed that during the starting two months of the year the volatility was comparatively high due to occurrence of the most significant economic event of the year i.e., presentation of union budget. The month of December was found to provide good prospect to investors by providing higher returns that too with lower volatility. On the other hand, it was revealed that the months of March and September were not so favourable for the investments. It was also found that Wednesday was a good day for investment as the returns on this day were comparatively high without high volatility.

Joshi (2013) emphasised that investors should be aware of the factors which impact stock market. In this study several factors which were responsible for creating movement in Indian stock market were revealed. These factors included GDP growth rate, inflation, political stability, flow of FIIs, liquidity and interest rates.

Kothari (2016) examined the perception of investors to identify factors affecting volatility in Indian stock market. The primary data was used for the study and the models used for the analysis included factor analysis and multiple regression model. It was revealed in the study that high degree of volatility was exhibited by the Indian stock market. It was found that stock market volatility was impacted by external factors the most followed by the stock market factors and company specific factors.

3. OBJECTIVES OF THE STUDY

1. To study the driving forces behind volatility in stock market.
2. To study the steps taken to control volatility.

OBJECTIVES OF THE STUDY

1. To study the causes of volatility in Indian Stock Market.
2. To study the various aspects of Indian Stock Market in detail.
3. To study the measures have been adopted to control volatility.

4. RESEARCH METHODOLOGY

Research Type: Descriptive study: It is defined as research method which research method explains and describes the attributes of the population or the phenomenon that is being studied.

Data Collection: Secondary data from various published sources like journals, books, websites etc.

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5. CAUSES OF VOLATILITY IN INDIAN STOCK MARKET

"Volatility is basically a function of uncertainty." Say's John Bollinger. It can be measured with the help of standard deviation and variance. Higher the volatility, higher is the risk in security and vice versa. There are number of factors which cause volatility in stock market like rate of inflation, economic crisis, social and political factors, changes in economic policy, economic indicators etc. Main factors which influence volatility in Indian stock market are:

a. **Government Policies**: Government makes various policies to improve the economic conditions. These policies impact the economy and businesses directly or indirectly. Any change in these policies can be beneficial for the business or may affect it in a negative way. Due to which there is always a possibility of stock market being affected. For example, decrease in corporate taxes leads to increase in profits of the industry which will further lead to increase in stock prices.

b. **Monetary Policy of RBI**: Any change by RBI in monetary policy also impacts the stock market. Change in the monetary policy leads to increase or decrease in liquidity in banks. If with the change in policy the liquidity of banks increases, it leads to decrease in lending rates. Decreased lending rates lead to credit expansion. With the availability of credit at cheaper rates, investors increase their investment in stock market. Therefore, the stock prices start increasing and vice versa.

c. **Exchange Rates**: Exchange rate is the price of currency of a country in terms of currency of another country. In simple words we can say it is the relative price of a currency in terms of currency of some another country. This rate is also known as forex rate. It is not static. It keeps on changing. When the Indian rupee hardens with reference to other currencies, companies involved in overseas trade or operations are greatly affected as Indian goods become costly in foreign markets. Therefore, there is a downfall in demand of Indian goods in foreign countries. This leads to decrease in revenue from exports further resulting into decrease in stock prices of such companies. Alternatively, softening of rupee in relation to other currencies ends in opposite effect, in this, the stock price of exporters increases while, that of importer falls.

d. **Inflation**: inflation means increase in the prices of goods and services over a period of time. High rate of inflation in the economy acts as a discouraging factor for investors, which leads to fall in investments and also affects long term economic growth adversely. Due to fall in investments various firms which are listed on stock exchanges, postpone their investments and also delay their production leading to adverse growth of economy. Moreover, the value of savings also gets adversely affected by the decrease in value of money. The shares of luxurious companies also suffer as people are not interested to invest in them. Therefore, an individual's ability to invest and purchasing power both are affected by inflation. Past studies indicate that low inflation and valuations have negative correlation. The reason behind this correlation is that low inflation drives high multiples and high inflation propels low multiples.

e. **Latest Information on Stock Prices:** information is one of the most critical factors which affect the movement of prices of stocks as value of stock is based on the information provided by the market. As soon as the information is updated, the share prices get adjusted. Share prices move up and down as per the market interpretations regarding the impact of the information on firm's future earnings ability.

f. **Psychological Issues:** human behaviour also affects the share prices greatly. Voracity is one of the attributes which will result in rise in stock prices more than they should. Any form of latest information can bring out a hysterical market causing a raise in share prices, and may make investors ignore logical valuation, preferring to purchase the stock so that they are not left behind. Similarly fear in the mind of investors can lead to decrease in the prices of stocks as investors rush to sell off the shares as soon as possible to avoid the losses.

g. **Foreign Institutional Investors (FIIs) and Domestic Institutional Investors (DIIs):** Both FIIs and DIIs have a significant role in the capital structure of the company. Consequently, their activities highly influence the stock market. Their entry and exit in the stock market leads to change in the stock prices.

h. **Natural Disasters**: natural disasters also impact the stock prices to a great extent as it directly affects the capacity of people to spend the money. As the consumption level of people reduces it leads to decrease in the level of sales a

i. nd revenue which hampers the performance of the company and ultimately the prices of the stocks fall.

6. STEPS TO CONTROL VOLATILITY

a. **Price band and Circuit Breakers**: It is a financial regulatory instrument used to make sure that there is no extreme price movement in the stock market. It is used to prevent stock market crashes. Circuit breakers are generally a pre-defined value in percentage terms. As soon as the price of a stock or index crosses this pre-defined range the circuit breaker is triggered. When the circuit breaker is triggered the trading in the stock market is halted and is resumed after a certain period of time depending upon the situation.

Majority stocks listed on NSE and BSE have an upper and lower price bands which have been categorised into five types:
1. Stocks with no price band
2. Stocks with 20% price band
3. Stocks with 10% price band
4. Stocks with 5% price band
5. Stocks with 2% price band

Similarly, there are market wide price bands which are implemented through circuit breaker system. Movement of SENSEX and NIFTY triggers the market wide circuit breakers. These are applicable at three stages of index movement.

Price band	Time	Trading Halted for
10%	Before 1:00 P.M. Between 1:00 P.M. and 2:30 P.M. After 2:30 P.M.	1 hour 30 minutes No trading halt
15%	Before 1:00 P.M. Between 1:00 P.M. and 2:00 P.M. After 2:00 P.M.	2 hours 1 hour For remaining day
20%	Any time	For remaining day

b) **Pre-open Session**: In India trading in stock markets starts at 9:15 AM and ends at 3:30PM. But the market opens between 9:00AM-9:15AM. This is known as pre-open market session. It began in India in 2010. This 15-minute session prior to the actual market opening was introduced with the aim of stabilising volatility and extraordinary movements in the market due to major events and announcements that comes overnight. This pre-open market session has been divided into three sub sections:

c)

Session	Timings	Tasks undertaken
Order entry session	9:00 AM -9:08 AM	Placing an order Modify and cancel orders
Order matching session	9:08 AM- 9:12 AM	Order confirmation and matching Calculating the opening price for normal session
Buffer session	9:12 AM- 9:15 AM	Facilitates transition from pre open to regular market session

d) **Margin trading**: It is a facility which provides the opportunity to investors to purchase the shares or securities they can't afford by just paying the marginal amount. The marginal amount paid can be in the form of cash or in shares. The broker finances the margin trading transactions. The balance amount can be settled later. One makes profit from the transaction when the profit earned is more than the margin, else one bear a loss.

6. FINDINGS AND SUGGESTIONS

As stock market allows for investment across multiple entities one can easily mitigate risk by investing in different stocks in stock markets. Investors can easily mitigate the risk by pooling their small investments into a large bucket. Now-a-days stock market proves to be a most suitable avenue for investment by the investors as it offers various options to investors to invest in professionally managed portfolios that too at a low cost. The review of literature has brought to light that there are number of factors which impact the stock market volatility like rate of inflation, economic crisis, social and political factors, changes in economic policy, economic indicators etc. In this research I have identified the various factors which influence the Indian stock market. Besides identifying the factors, different steps which are used to control the volatility have also been discussed.

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