

# **IMPLICATIONS IN STOCK MARKET IN INDIA**

#### Shilpa Rani

#### Department of Commerce

Govt. Girls College for Women, Bhodiakhera (Fatehabad)

#### EMAIL-ID: <a href="mailto:shilpakathuria4@gmail.com">shilpakathuria4@gmail.com</a>

Declaration of Author: I hereby declare that the content of this research paper has been truly made by me including the title of the research paper/research article, and no serial sequence of any sentence has been copied through internet or any other source except references or some unavoidable essential or technical terms. In case of finding any patent or copy right content of any source or other author in my paper/article, I shall always be responsible for further clarification or any legal issues. For sole right content of different author or different source, which was unintentionally or intentionally used in this research paper shall immediately be removed from this journal and I shall be accountable for any further legal issues, and there will be no responsibility of Journal in any matter. If anyone has some issue related to the content of this research paper's copied or plagiarism content he/she may contact on my above mentioned email ID.

### ABSTRACT

Indian capital market has witnessed liberalization for more than two decades on account of ongoing economic and financial sector reforms initiated by the Government of India since 1991. The information technology revolution, substantial deregulation and harmonization has led to increasing free flow of capital across and within markets that has fostered integration. This market integration has resulted in transmission of volatility from one market to other as well as within markets. The general concern which is emerging with such developments is the increased volatility of equity returns. The present paper is an attempt to understand the nature of volatility in Indian and Chinese stock markets and examine the inter linkage between them. The study uses monthly returns from Bombay Stock Exchange (BSE Sensex) for Indian stock market and Shanghai Stock Exchange for Chinese stock market respectively from April 01, 2004 to March 31,2010. The transmission of volatility between India and China is examined by applying Granger causality test. The results show that the volatility was at its highest level in the year 2008 in both the countries. However, the Indian stock market is found to be more volatile than Chinese stock market but returns in Indian stock market were comparatively more than in China.

*Keywords*: Integration, Volatility Transmission, Stock market volatility, impact of volatility, factors of volatility, growth and volatility, trade and volatility.

### **INTRODUCTION**

Volatility refers to the amount of uncertainty or risk about the magnitude of changes in security's value. Volatility measures variability of dispersion about a central

tendency. It is a measure of how far current price of an asset deviates from its average

past prices. A higher volatility means that a security's value can potentially be spread out over a larger range of values. This implies that the price of the security can change over a short time period. Investors perceive high volatility as a sign of investor nervousness and low volatility as a sign of confidence (Jain and Dash, 2012). Globalization has also increased comovement in stock prices across international markets. Consequently, any information regarding the economic fundamentals of country one gets transmitted to other markets and thus affects other's stock markets. Before investing in an asset, investors incorporate information about price movements and volatility in the same asset and related assets listed in different countries. This issue is an important concern for portfolio investors because greater integration among world markets implies stronger co-movements between markets, thereby nullifying much of the gain out diversification across borders. With the rapid growth in the economies of India and China, many investors would certainly consider investing in these two

markets rather than in with each other, so that investing in either India or China will provide a benefit of diversification, is a major concern for investors.

# **REVIEW OF LITERATURE**

# Studies on Trends and Reasons Leading to Volatility

Majority of the studies have focused on one or more factors leading to volatility in stock

# Market:-

Aggarwal et al. (1999) examined the events associated with the sudden shift in volatility of stock market returns. He found that mostly country specific events caused large shift in volatility rather than global events or change in exchange rate regimes. The only global event that affected most of the emerging markets was October 1987 crash.

**Raju and Ghosh (2004)** made an international comparison of 18 countries by dividing them into developing and developed economies and found that the returns of markets in India and China were as high as that of United States (US) and United Kingdom (UK) but the volatility of both the markets was higher.

Joshi and Panday (2007) examined the nature of the volatility in the Indian stock markets using closing prices of S&P CNX Nifty and BSE Sensex stock prices and concluded that both the stock markets exhibited volatility clustering and volatility

persistence.

**Cha and Cheung (1998)** examined the impact of US and Japanese market on Asia's market and found strong evidence of comovements among world equity markets with the US market playing the leading role. Macdonald (2001) studied the inter linkages among Central and Eastern Europe (CE) stock market indices as a group and three developed markets (US, UK and Germany) and found significant long run co-movements among them.

**Singh (2010)** analysed the linkage between China and India with four major developed markets and concluded that both Indian and Chinese stock market are cointegrated with all the four developed markets and also there exists a bilateral causality between India and China.

**Tripathi and Sethi (2012)** examined the inter linkage between India and the advancedemerging economies i.e. Brazil, Hungary, Taiwan, Mexico, Poland and South Africa. The Granger Causality results revealed that short term linkage of Indian stock market with the advanced emerging economies has increased over the period of study.

**Gahlot (2014)** studied the nature of volatility and volatility spillover among South Asian countries. He found the existence of bilateral causal relationship between India and US, both in short and long term. Moreover, the recession has been found to have a higher shock impact on the permanent component of volatility. The information technology revolution had a tremendous impact on the structure of financial markets with the quick diffusion of information and the substantial deregulation and harmonization which led to increasing flow of capital across and within markets that has fostered integration

Kevin Lansiang (2014) studied the effects of availability of information on volatility and components such as risk taking ability of the investor for variability of his return on the normal distribution of his investment. This paper attempts to study the fact that stock market returns and volatility cannot be studied in isolation or based on one or a handful of variables. A scattered plot model has been used for studying the effects of ripples which are created in the stock market because of diversification of the investment. It was found in the study that the volatility of the stock returns becomes complex to analyse when aggregate factors are taken into consideration because of the 'n' numbers of variables which may or may not be provide an explanation for the particular phenomena.

Madhvi S. (2014) studied the impact of global changes on the evolution of the Indian market, the factors which affect the functioning of determining the prices of stocks and the process which is adopted by the Indian stock market. The paper has focussed on finding out whether the difference in the functioning of the Indian stock market and other western markets plays any role in dynamic and non-relatively low dynamic behaviour of the Indian stock markets. It was found in the study that the Indian stock market has a concrete base and strong fundamentals in determining stock prices; it has stuck to fundamental basics in daily operations making it an optimised and efficient platform where there is very low probability of default or prolonged volatile runs and thereby making it a highly stable and safe market to invest in.

Anju B (2013) reviewed the Indian stock market as a whole. The major objective of this research study was to develop an understanding about the Indian stock market, the reason behind its growth story in the recent past and the sustainability of the Indian stock market even during the economic slowdown. It was evident in the study that the reason behind the successful run of the Indian stock market was the conservative approach of the investors which kept them from taking decisions which were not evaluated properly; they undertook a proper appraisal of stock assets. Also the government policies and its perseverance to elongate the growth story of the booming Indian economy acted as a pillar to the sustainable structure on which the Indian stock markets are built upon. The investors' fundamental approach and the government decision making were two factors which were cited as the reason for the evolution, growth and sustainability of

# **OBJECTIVES OF THE STUDY**

the Indian stock markets.

The objectives of the current study are:

 To determine the trend in volatility in BSE Sensex vis a vis SSE Composite.

- 2. To identify the reasons for volatility in Indian stock market.
- To determine the causal relation between BSE Sensex and SSE Composite.
- 4. To study the changes in the volatility of prices of stocks and the events which are responsible for the reasons behind the shift in the patterns of volatility in stock prices.
- To examine if in recent times the stock market cycles have exhibited greater volatility due to increased foreign investment.

# DATABASE AND METHODOLOGY

The present study is based on the volatility in BSE Sensex and SSE Composite. BSE Sensex, the free-float market capitalization based index, estimated on the basis of 30 stocks is considered to be the representative of the Indian equity market. The SSE Composite Index is stock market indexes of all stocks (A shares and B shares) that are traded at the Shanghai Stock Exchange, calculated using a Paasche weighted composite price index formula. The time period chosen for study is April 2004 to March 2010. From the closing prices,

# **RESULTS AND ANALYSIS**

returns have been calculated for each month. Return is calculated using logarithmic method as follows:

 $rt = (\log pt - \log pt - 1)*100$ 

where

rt = Market return at the period t

pt= Price index at day t

pt-1= Price index at day t-1 and

log = Natural log

Volatility has been calculated as the standard deviation of the natural log of returns in indices for the respective period. Graphs have been used to evaluate the trends in volatility over to facilitate comparison. Separate graphs have been drawn for each individual year of the study and reasons for the volatility have been identified from them. Granger causality test has also been applied in order to examine the dynamic linkage between Sensex and its Sectoral Indices. Granger causality test is applied on a stationary series. This test analyses the two given factors to identify the cause and affect variable.

# Trend in Volatility in BSE Sensex Vis-a-Vis SSE Composite



#### **Graph 1.** Volatility at BSE and SSE Composite during 2004-05

**Source:** Author's graphic representation based on secondary data obtained from www.bseindia.com and http://english.sse.com.cn/

The monthly volatility as shown in Graph 1 indicates that Indian stock market was highly volatile in May 2004. The trend declined after May 2004 till December 2004 and in January, the volatility again shot up. The overall performance of Indian stock market was quite well during the year 2014 except for the month of May. However, the Chinese stock market followed an increasing trend towards the beginning of year till September 2004, after which it started declining. The volatility was highest in the month of September. Sensex exhibited more volatility than SSE during the year. Volatility of Sensex was high in May 2004

mainly due to political uncertainty. The prospect of a non-BJP government in the center made the big players in the stock market nervous about the continuation of the ongoing reforms in India. In January, volatility shot up due to general weakness in global markets. The volatility of SSE Composite was high in the beginning, incidental to the announcement of new policies to restrain out-of control fixed asset investment through restrictions on credit and land use. Volatility was high in September on account of Government macroeconomic tightening measures and questions about Chinese accounting standards. The major

reason for continued slump in the markets

was the unresolved question of State shares.







As shown in Graph 2, the volatility of BSE Sensex declined significantly in 2005-06 incomparison to previous year. The trend in volatility was inconsistent during the year. The volatility was highest in October 2005. After October 2005, the volatility followed a declining trend. SSE Composite witnessed declining trend in the beginning of the year. The volatility shot up in the month of June. Except for June, the volatility remained stable throughout the year. Volatility of BSE Sensex increased in April on account of the effects of Union Budget 2005-06. Volatility of SSE was quite stable because of number of reforms initiated by the Chinese Government in order to protect the interest of investor such as elimination of nontradable shares held by the State or by the politically connected institutional investors, issuing of new guidelines to encourage listed companies to be more transparent, inform investors of their growth strategies, business plans and about major events in order to governance improve and strengthen shareholder rights.

Graph 3. Volatility at BSE and SSE Composite during 2006-07





As graph 3 shows that BSE Sensex exhibited more volatility than that of SSE Composite in the beginning of the year but since October the volatility of SSE Composite was more than that of BSE Sensex. The trend in volatility of BSE Sensex was quite inconsistent with constant ups and downs. Volatility was found to be highest in the month of June 2006 due to uncertainty in global interest rates, fall in metal prices, inflationary pressures, and announcement of international sports event (FIFA World cup). The volatility of SSE Composite was quite stable. The volatility shot up towards the end of financial year in January 2007 and it was highest in the month of February.

Graph 4. Volatility at BSE and SSE Composite during 2008-09



**Source:** Author's graphic representation based on secondary data obtained from www.bseindia.com and http://english.sse.com.cn/

Graph 4 reveals that both BSE Sensex and SSE Composite witnessed volatile trend during 2008- 09. The markets were characterised by severe bouts of volatility during the year. Volatility of Sensex was highest in October 2008. Infact, it was highest for the total study period while for SSE Composite, volatility was highest in the month of April. SSE plunged a staggering 65% during the year. As far as Sensex is concerned, the volatility was high during the on account of uncertainties in vear international financial markets, concerns of deepening recession in developed economies, high inflation rates, tightening

RBI policies and weak industrial production data. Global events have been largely responsible for the rising volatility in the month of October. In January 2009, a corporate scandal was witnessed where Satyam's chairman Ramalinga Raju confessed that the company's accounts had been falsified causing huge loss to the investors. During the same time, SSE Composite witnessed a volatile trend on account of tightening monetary policy, global economic slowdown, pressure of huge freed up non- tradable shares coming into the market and US subprime mortgage crisis.

Graph 5. Volatility at BSE And SSE Composite during 2009-10



**Source:** Author's graphic representation based on secondary data obtained from www.bseindia.com and http:// english.sse.com.cn/

August, 2015

# Airo International Research Journal Volume VI, ISSN: 2320-3714

The volatility of both the indices as shown in Graph 5, reduced significantly during the year as compared to the previous year. The market environment improved in 2009-10. Volatility of Sensex was highest during May but declined during the later part of the year. SSE exhibited highest volatility in the month of August.SSE Composite gained 80% during the year. However, the volatility of Indian stock market was quite stable throughout the year except for the month of May on account of political uncertainty. May 2009 was the most volatile month for BSE Sensex.

# CONCLUSION

The present research highlights that there have been multiple reasons, local and domestic, leading to volatility in the both Indian and Chinese stock markets. The volatility was highest in year 2008 in both the markets for which the global events

have been largely responsible. However, BSE Sensex was found to be more volatile than SSE Composite. In addition to various domestic factors, volatility of major foreign trading partners was one of the important determinants of stock return volatility in a domestic market. In India as well, there are a number of domestic and global factors that led to volatility. The prominent ones being political reasons, economic policies, regulations of the government, privatization and globalization, the net effect of FIIs, civil disturbances in the country as well as outside the country, psychological factors etc. With increasing integration any shock that occurs in one market is quickly transmitted to the other markets.

# Limitations of the study

Indicated below are a few limitations of the study:

- The scope of this study is relatively narrow.
- The main limitation of this study is that it has been conducted to particularly evaluate the effect of the post-economic slowdown on the capital markets. The sample does not reflect the sentiments of different geographical areas and hence, this study cannot be simultaneouslyreferred for evaluation of all types of markets and their volatilities and returns.
- The scope of this study does not include the cognizable efficiency analysis which plays somepart in the capital market analysis.

# REFERENCES

- Aggarwal, R., Inclan, C. & Leal, R. 1999. Volatility in Emerging Stock Markets. *Journal of Financial and Quantitative Analysis*, 34(01): 33-55.
- Batra, A. 2004. Stock Return Volatility Patterns in India. Indian Council for Research on
- International Economic Relations, Working Paper, 124: 1-34.
- Bhar, R., & Nikolova, B. 2007. Analysis of Mean and Volatility Spillovers Using BRIC
- Countries, Regional and World Equity Index Returns. *Journal of Economic Integration*, 22(2): 369-381.
- Cha, B. & Cheung, Y. L. 1998. The Impact of the US and the Japanese Equity Markets on the Emerging Asia-Pacific Equity Markets. *Asia-Pacific Financial Markets*, 5(3): 191-209.
- Chen, H., Lobo, B. J. & Wong, W. K. 2005. Links Between the Indian, US and Chinese Stock Markets, Working Paper No.0602.Available At
- 8. Eun, C.S. and Shin, S.1989. International Transmission of Stock

Market Movements. *Journal of Financial and Quantitative Analysis*, 24(2): 41- 56.

- Breedon F, Ranaldo A (2010) "Intraday patterns in FX returns and order flow", Swiss National Bank working papers, 11, pp. 135-143.
- David R. (2013) "Over the Borderline: How the characteristics of lines shape", Economic letters, Elsevier, vol. 119(2), pp. 113- 118.
- 11. Sharma A, Seth N (2011) "A study of selected indices and volatility", Journal of Management Science; vol. 2, pp. 138-154.
- K.R. Shanmugam, Biswa Swarup, (2008) "Stock returns - Inflation relation in India", Finance working papers 22514,pp. 157-172.
- Anju B (2013) "The reformed financial mechanism of stock indices", Journal of Finance and Stock Market 213, pp. 178-194.
- Madhvi S. (2013) "The impact of inflation on stock price volatility", Indian stock market working paper vol. 68, pp. 45-63.