TRENDS IN VOLATILITY OF STOCK MARKET

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TRENDS IN VOLATILITY OF STOCK MARKET

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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 emerging stock markets and examine the inter linkage between them. The study observed the monthly volatility in BSE and NSE for Indian stock market and Indian equity market was well placed as compared to its peers to withstand the volatility in global financial markets. The decline in the prices of equity shares was widespread during the year, with blue chip indices, broad based indices and sectoral indices all ending the year in the red as compared to 2014-15. However, the Indian equity markets maintained a reasonable degree of resilience during the year, despite the spill-over effects from global factors. India's first volatility index- India VIX- indicates investors' perceptions of the market's volatility in the next 30 calendar days. The India VIX closed at 16.6 on March 31, 2016 as compared to 14.5 on March 31, 2015 registering an increase of 14.5 per cent, indicating investors' expectations of rising volatility. In the year 2015-16, the emerging markets, China depicted the highest volatility (41.0 per cent), followed by Russia (36.5 per cent), Argentina (32.9 per cent) and Brazil (25.7 per cent). In 2015-16, volatility in Indian benchmark indices was substantially lower than in the indices chosen for comparison showing signs of macroeconomic stability, resilience and optimism in Indian markets.

Keywords: Volatility of Benchmark Indices, Stock market, Emerging market,

INTRODUCTION

The stock market is one of the most important ways for companies to raise money, along with debt markets which are generally more imposing but do not trade publicly. This allows businesses to be publicly traded, and raise additional financial capital for expansion by selling shares of ownership of the company in a public market. The liquidity that an exchange affords the investors enables their holders to quickly and easily sell securities. This is an attractive feature of investing in stocks, compared to other less liquid investments such as property and other immoveable assets. Some companies actively increase liquidity by trading in their own shares.

History has shown that the price of stocks and other assets is an important part of the dynamics of economic activity, and can influence or be an indicator of social mood. An economy where the stock market is on the rise is considered to be an up-and-coming economy. The stock market is often considered the primary indicator of a country's economic strength and development.

Rising share prices, for instance, tend to be associated with increased business investment and vice versa. Share prices also affect the wealth of households and their consumption. Therefore, central banks tend to keep an eye on the control and behavior of the stock market and, in general, on the smooth operation of financial system functions. Financial stability is the raison d'être of central banks.

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Exchanges also act as the clearinghouse for each transaction, meaning that they collect and deliver the shares, and guarantee payment to the seller of a security. This eliminates the risk to an individual buyer or seller that the counterparty could default on the transaction.

The smooth functioning of all these activities facilitates economic growth in that lower costs and enterprise risks promote the production of goods and services as well as possibly employment. In this way the financial system is assumed to contribute to increased prosperity, although some controversy exists as to whether the optimal financial system is bank-based or market-based.

Recent events such as the Global Financial Crisis have prompted a heightened degree of scrutiny of the impact of the structure of stock markets (called market microstructure), in particular to the stability of the financial system and the transmission of systemic risk.

OBJECTIVE

1. To study Daily Volatility in Stock market
2. To study the Trends in annualized volatility of Emerging stock market indices

SCOPE OF THE STUDY

The study shows Trends in annualized volatility of 17 emerging stock market indices, the paper study the volatility effects in stock market. However the paper studies the Sensex and Nifty monthly and Annualized volatility effects in the market.

REVIEW OF LITERATURE

Dr. Rosy Kalra Mr. Piyuesh Pandey (2015),conducted paper on Volatility patterns of stock returns in India, Dr. Rosy Kalra This paper analyzes the time variation in volatility in the Indian stock market during 2009 - 2014. Analysis has been done to examine if there has been an increase or a decrease in volatility persistence in the Indian stock market on account of the process of financial slowdown in India after the global crisis. Further, an attempt to characterize the evolution of the stock market cycles over time in India has been made; for this purpose, monthly stock returns have been used for analysis. Asymmetric GARCH model has been used to estimate the element of time variation in volatility. A descriptive design has been adopted to conduct the research work. It is evident from the study that the adoption of liberal norms and allowing foreign investment in the form of FIIs does not impact or add to the volatility of returns of the stock market. There is no structural shift due to heavy trading of stocks by the foreign investors; it is revealed that it just adds to the volume of the shares traded by the investors which may be a cause of abnormal distribution of returns on stocks traded.

M. Thenmozhi1 and Abhijeet Chandra(2013), emphasized India Volatility Index (India VIX)
and Risk Management in the Indian Stock Market, This study examines the asymmetric relationship between the India Volatility Index (India VIX)3 and stock market returns, and demonstrates that Nifty returns are negatively related to the changes in the India VIX levels; in the case of high upward movements in the market, the returns on the two indices tend to move independently. When the market takes a sharp downward turn, the relationship is not as significant for higher quantiles. This property of the India VIX makes it ideal as a risk management tool whereby derivative products based on the volatility index can be used for portfolio insurance against bad declines. We also find that the India VIX captures stock market volatility better than traditional measures of volatility, including the ARCH/GARCH class of models. Finally, we test whether changes in the India VIX can be used as a signal for switching portfolios. Our analysis of timing strategy based on changes in the India VIX exhibits that switching to large-cap (mid-cap) portfolios when the India volatility index increases (decreases) by a certain percentage point can be useful in maintaining positive returns on a portfolio.

JATINDER LOOMBA (2012),paper on DO FIIS IMPACT VOLATILITY OF INDIAN STOCK MARKET ?, The Foreign Institutional Investors (FIIs) have emerged as noteworthy players in the Indian stock market and their growing contribution adds as an important feature of the development of stock markets in India. To facilitate foreign capital flows, developing countries have been advised to strengthen their stock markets. As a result, the Indian Stock Markets have reached new heights and became more volatile making the researches work in this dimension of establishing the link between FIIs and Stock Market volatility. Hence, it"s an interesting topic to ascertain the role of FIIs in Indian Capital Markets. This paper makes an attempt to develop an understanding of the dynamics of the trading behaviour of FIIs and effect on the Indian equity market. The study is conducted using daily data on BSE Sensex and FII activity over a period of 10 years spanning from 01st Jan 2001 to 31st Dec 2011. It provides the evidence of significant positive correlation between FII activity and effects on Indian Capital Market. The analysis also finds that the movements in the Indian Capital Market are fairly explained by the FII net inflows.
Debjiban Mukherjee(2007), conducted study on Comparative Analysis of Indian Stock Market with International Markets, The stock market is witnessing heightened activities and is increasingly gaining importance. In the current context of globalization and the subsequent integration of the global markets this paper captures the trends, similarities and patterns in the activities and movements of the Indian Stock Market in comparison to its international counterparts. This study covers New York Stock Exchange (NYSE), Hong Kong Stock exchange (HSE), Tokyo Stock exchange (TSE), Russian Stock exchange (RSE), Korean Stock exchange (KSE) from various socio-politico-economic backgrounds. Both the Bombay Stock exchange (BSE) and the National Stock Exchange of Indian Limited (NSE) have been used in the study as a part of Indian Stock Market. The time period has been divided into various eras to test

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the correlation between the various exchanges to prove that the Indian markets have become more integrated with its global counterparts and its reaction are in tandem with that are seen globally.

MARIE-HÉLÈNE GROUARD, SÉBASTIEN LÉVY, CATHERINE UBOCHINSKY (2003), paper on *Stock market volatility:from empirical data to their interpretation, Wide swings in stock market prices in both Europe and the United States in recent years have revived the financial community's interest in the concept of volatility. Even though investors frequently use the volatility of equity returns as an instrument for measuring risk, estimating volatility still raises problems and caution should be applied when interpreting it. However, an analysis of various available volatility indicators suggests that stock market volatility has shown an upward trend since 1997. This increase is most noticeable for technology, media and telecommunications stocks. Yet, when seen in the very long-term perspective, the current level of stock market volatility does not seem unusual or even extraordinarily high. Recent volatility patterns stem primarily from the lasting and substantial decline in stock prices from the highs reached in 2000, a large number of shocks affecting the financial economy, heightened uncertainty about geopolitical and macroeconomic developments and investors' growing doubts about the quality of financial assets against the background of weaker corporate capital structures. In addition to these cyclical factors, this article examines how the way markets work may also have an impact on volatility. In particular, it looks at how widely held beliefs, or the « market consensus, can create price misalignments, which then lead to corrections. This usually results in large changes in prices associated with a high level of volatility. Finally, it looks at the role of the market participants' operating environment, where there is a degree of uniformity in market risk management techniques and where institutional asset management is growing. This environment could in fact contribute to even greater uniformity in investors behaviours and fuel a rising trend in volatility.*

Dr.Mrs. Punithavathy Pandian & Dr.Sr. Queensly Jeyanthi(2009), study on Stock Market Volatility in Indian Stock Exchanges, Stock prices are changed everyday 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 market. Pricing of securities depends on volatility of each asset. An increase in stock market volatility brings a large stock price change of advances or declines. Investors interpret a raise in stock market volatility as an increase in the risk of equity investment and consequently they shift their funds to less risky assets. It has an impact on business investment spending and economic growth through a number of channels. Changes in local or global economic and political environment influence the share price movements and show the state of stock market to the general public. The issues of return and volatility have become increasingly important in recent times to the Indian investors, regulators, brokers, policy makers, dealers and researchers with the increase in the FIIs investment.

Saadet Kasman , Gülin Vardar, Gökçe Tunç(2011), emphasized paper on The impact of interest rate and exchange rate volatility on banks' stock returns and volatility: Evidence from Turkey This paper investigates the effects of interest rate and foreign exchange rate changes on Turkish banks' stock returns using the OLS and GARCH estimation models. The results suggest that interest rate and exchange rate changes have a negative and significant impact on the conditional bank stock return. Also, bank stock return sensitivities are found to be stronger for market return than interest rates and exchange rates, implying that market return plays an important role in determining the dynamics of conditional return of bank stocks. The results further indicate that interest rate and exchange rate volatility are the major determinants of the conditional bank stock return volatility.

Anna Creti, Marc Joëts, Valérie Mignon(2013), conducted study On the links between stock and commodity markets' volatility This paper investigates the links between price returns for 25 commodities and stocks over the period from January 2001 to November 2011, by paying a particular attention to energy raw materials. Relying on the dynamic conditional correlation (DCC) GARCH methodology,we showthat the correlations between commodity
and stock markets evolve through time and are highly volatile, particularly since the 2007–2008 financial crisis. The latter has played a key role, emphasizing the links between commodity and stock markets, and underlining the financialization of commodity markets. At the idiosyncratic level, a speculation phenomenon is highlighted for oil, coffee and cocoa, while the safe-haven role of gold is evidenced.

RESEARCH METHODOLOGY

The present study is based on the volatility in Emerging stock market. The Indian equity market was well placed as compared to its peers to withstand the volatility in global financial markets. The decline in the prices of equity shares was widespread during the year, with blue chip indices, broad based indices and sectoral indices all ending the year in the red as compared to 2014-15. However, the Indian equity markets maintained a reasonable degree of resilience during the year, despite the spill-over effects from global factors. India's first volatility index- India VIX- indicates investors' perceptions of the market's volatility in the next 30 calendar days.
Data: Secondary data – SEBI report
Tools used: Excel, with line graph
Sample: 6 years 2010-2016

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DISCUSSION AND RESULTS

Table 1.1: Average Daily Volatility of Benchmark Indices

Month	BSE Sensex	S&P CNX Nifty	BSE 100	BSE Small Cap	BSE 500	S&P CNX 500
1	2	3	4	5	6	7
Apr-10	0.8	0.8	0.8	0.7	0.8	1.2
May-10	1.5	1.6	1.5	1.6	1.5	1.9
Jun-10	1.2	1.2	1.1	0.9	1.0	1.3
Jul-10	0.6	0.6	0.6	0.4	0.5	0.8
Aug-10	0.7	0.7	0.6	0.7	0.6	1.1
Sep-10	0.8	0.8	0.7	0.8	0.7	1.1
Oct-10	1.1	1.1	1.0	0.9	0.9	1.1
Nov-10	1.3	1.3	1.3	1.5	1.3	1.9
Dec-10	0.9	0.9	1.0	1.4	1.1	1.9
Jan-11	1.1	1.2	1.1	1.2	1.1	1.9
Feb-11	1.5	1.5	1.5	1.7	1.5	2.0
Mar-11	1.3	1.3	1.2	1.1	1.1	1.5

Note: Volatility is measured in terms of standard deviation and is computed from the logarithmic returns based on closing values of indices as on the last date of the month.
Source: SEBI report

In the year 2010-11, the stock markets around the world displayed lesser volatility as compared to 2009-10. Month-wise, average daily volatility in the Indian benchmark indices was the highest in May, 2010 and Feb, 2011 (Table 1.1). The lowest volatility in the benchmark indices was noticed during July 2010. The annualized volatility of BSE Sensex decreased from 29.2 percent in 2009-10 to 21.1 percent in 2010-11. Similar trend was also observed for S&P CNX Nifty, which recorded annualized volatility of 21.4 percent in 2010-11 as compared to 29.4 percent in the previous year.

Table 1.2: Daily Volatility of Benchmark Indices

Month	BSE Sensex	S&P CNX Nifty	BSE 100	BSE Small Cap	S&P CNX 500
1	2	3	4	5	6
Apr-11	1.1	1.0	1.0	1.2	0.9
May-11	1.1	1.1	1.1	0.9	1.1
Jun-11	1.0	1.0	0.9	1.0	0.9
Jul-11	1.0	1.0	0.9	0.7	0.9
Aug-11	1.5	1.5	1.5	1.6	1.4
Sep-11	1.6	1.6	1.5	1.2	1.4
Nov-11	1.6	1.6	1.5	0.8	1.4
Nov-11	1.3	1.3	1.3	1.1	1.2
Dec-11	1.5	1.5	1.5	1.1	1.4
Jan-12	1.1	1.1	1.1	1.0	1.1
Feb-12	1.1	1.1	1.2	1.5	1.3
Mar-12	1.3	1.3	1.3	1.0	1.3

Source: SEBI report

The annualized volatility of BSE Sensex, measured by standard deviation of log returns, declined to 20.2 percent in 2011-12 from 21.1 percent in the previous year. Similar trend was also observed for S&P CNX Nifty which declined to 20.4 percent from 21.4

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percent during the same period. Month-wise, volatility in the benchmark indices and the large-cap index, S&P CNX 500, was the highest in September 2011, October 2011 and August 2011, coinciding with significant correction of indices during the months (Table 1.2). The lowest volatility in the benchmark indices was noticed during June 2011 and July 2011. In case of the BSE Mid-cap and BSE Small-cap, the highest volatility was observed in August 2011 and September 2011. The volatility was high in BSE Small cap index in February 2012 also.

Table 1.3: Average Daily Volatility of Benchmark Indices

Month	BSE Sensex	CNX Nifty	BSE 100	BSE Small Cap	CNX 500	CNX Nifty Junior	CNX BANK
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Apr-12	0.8	0.84	0.80	0.75	0.80	0.78	1.05
May-12	0.96	0.98	0.95	0.8	0.92	0.96	158
Jun-12	1.12	1.14	1.13	0.61	1.04	1.00	1.72
Jul-12	0.87	0.89	0.86	0.92	0.84	0.86	1.04
Aug-12	0.56	0.62	0.55	0.62	0.54	0.54	0.86
Sep-12	0.91	0.95	0.88	0.50	0.80	0.67	1.56
Nov-12	0.69	0.71	0.72	0.77	0.70	0.76	1.10
Nov-12	0.72	0.73	0.72	0.66	0.68	0.81	1.07
Dec-12	1.06	0.52	1.23	0.63	0.54	0.66	0.67
Jan-13	0.55	0.55	0.60	0.88	0.62	0.85	0.79
Feb-13	0.69	0.69	0.74	0.94	0.74	0.93	1.08
Mar-13	0.82	0.84	0.89	1.10	0.89	1.08	1.39
Annualized Volatility	12.5	12.9	12.7	12.8	12.4	13.6	19.2

Source: SEBI report

The Indian equity markets oscillated between periods of buoyant investors optimism and those of declined conditioned by various domestic and global factors. Volatility in the benchmark indices dropped significantly in comparison to the past two years. The annualized volatility of BSE Sensex, measured by standard deviation of log return, declined to 12.5% in 2012-13 from 20.2 % in the previous year. Similar trend was also observed for CNX Nifty which declined to 12.9% from 20.4% during the same period. Month wise, volatility in the benchmark indices and the road indices was the highest in June 2012. The lowest volatility in the benchmark indices was noticed during January 2013. BSE small cap index and CNX Nifty Junior witnessed the highest volatility in march 2013. Compared to other indices, volatility in CNX Bank index was higher throughout the year.

Table 1.4: Average Daily Volatility of Benchmark Indices (in Percent)

Month	BSE Sensex	CNX Nifty	BSE 100	BSE Small Cap	CNX 500	CNX Nifty Junior	CNX BANK	SX40
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Apr-13	1.03	0.99	0.98	0.97	0.91	0.90	1.40	0.89
May-13	1.12	1.15	1.11	0.88	1.07	0.93	1.53	1.02
Jun-13	1.24	1.23	1.23	0.89	1.18	1.30	1.60	1.17
Jul-13	0.97	1.03	1.08	0.88	1.01	1.20	1.87	0.92
Aug-13	1.71	1.71	1.75	1.16	1.62	1.76	2.39	1.71
Sep-13	1.80	1.90	1.78	0.74	1.68	1.52	3.43	1.78
Oct-13	0.84	0.91	0.87	0.54	0.83	0.86	1.77	0.77
Nov-13	1.07	1.10	1.08	0.79	1.01	1.02	1.80	1.02
Dec-13	0.81	1.25	0.80	0.62	1.16	1.19	1.63	0.71
Jan-14	0.80	0.79	0.82	1.09	0.81	1.12	1.40	0.72
Feb-14	0.68	0.70	0.66	0.44	0.64	0.63	1.06	0.53
Mar-14	0.66	0.72	0.66	0.52	0.59	0.67	1.45	0.60
Annualized Volatility	**17.5**	**18.1**	**17.6**	**13.1**	**16.9**	**17.9**	**30.5**	**16.5**

Note: Average Daily Volatility is computed as the standard deviation of the logarithmic returns of the closing levels of the indices.

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The Indian Equity markets boomed back in 2013-14 to not only surpass the previous year benchmarks but also reach an all time high in terms of benchmark indices and market capitalisation in secondary markets. A host of domestic and global factors have facilitated this revival that includes various politico-economic indicators as well. While lower trade deficit, lower CAD and lower inflation fuelled the buoyancy outlining the investor optimism. Mixed cues from overseas markets after US consumer confidence slumped in September to a four-month low, further influenced the market sentiment. Expectations that the US government's partial shutdown and US political impasse could lead to the US Federal Reserve postponing tapering of monetary stimulus to the US economy also contributed to the volatility.

The annualised volatility of BSE Sensex, measured by standard deviation of log returns, increased to 17.5 percent in 2013-14 from 12.5 percent in 2012-13. Similar trend was also observed for CNX Nifty which moved to 18.1 percent from 12.9 percent during the same period. Month-wise analysis of the volatility of benchmark and other indices show that September 2013 has been the most volatile month in 2013-14 (Table1.4). The lowest volatility in the benchmark indices was seen in March 2014. BSE Small cap index and CNX Nifty Junior witnessed the highest volatility in August 2013. Compared to other indices, volatility in CNX Bank index was high throughout the year.

Table1.5: Annualized Volatility of Benchmark Indices

Annualized Volatility	**S&P BSE Sensex**	**CNX Nifty**	**S&P BSE 100**	**S&P BSE Small Cap**	**CNX 500**	**CNX Nifty Junior**	**CNX BANK**	**SX40**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
2013-14	17.5	18.1	17.6	13.1	16.9	17.9	30.5	16.5
2014-15	13.5	13.5	13.9	19.8	13.9	17.8	20.8	12.8

Source: SEBI report

In 2014-15, the Indian equity markets reached newer heights outshining the peaks observed in the previous year. The benchmark indices and market capitalisation in the secondary market attained all-time high figures. On the back of a pick-up in advanced economies and a slowdown in emerging markets global growth remained moderate. Robust recovery figures in the US and outperformance in the markets in Asia Pacific as compared to other regions led global growth amid weak growth in Europe, Latin America, the Commonwealth of Independent States and the Middle East. Strengthening of currency in real effective terms, policy reforms, a pick-up in investments and lower oil prices all propelled India's growth engine in 2014-15.

India VIX, India's first volatility index, indicates investors' perceptions of the market's volatility in the next 30 calendar days. The India VIX index had closed at 21.6 on March 31, 2014 compared to 14.5 on March 31, 2015 registering a decline of 32.9 percent, indicating investors' expectation of falling volatility.

The annualised volatility of the Sensex, measured by the standard deviation of log returns, decreased to 13.5 percent in 2014-15 from 17.5 percent in 2013-14. A similar trend was also observed for Nifty which moved down from 18.1 to 13.5 percent during the same period (Table 1.5). The highest volatility among the other indices was observed in the CNX Bank index followed by the S&P BSE small cap and the CNX Nifty junior index.

Table 1.6: Annualized Volatility of Benchmark Indices

Annualized Volatility	**S&P BSE Sensex**	**Nifty 50**	**S&P BSE 100**	**S&P BSE Small Cap**	**Nifty 500**	**Nifty Next 50**
1	**2**	**3**	**4**	**5**	**6**	**7**
2014-15	13.5	13.5	13.9	19.8	13.9	17.8
2015-16	17.0	17.1	17.2	20.3	17.3	19.6

Source: SEBI report

During 2015-16, the Indian equity market was well placed as compared to its peers to withstand the volatility in global financial markets. The decline in the prices of equity shares was widespread during the year, with blue chip indices, broad based indices and sectoral indices all ending the year in the red as compared to 2014-15. However, the Indian equity markets maintained a reasonable degree of resilience during the year, despite the spill-over effects from global factors. India's first volatility index- India VIX-

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indicates investors' perceptions of the market's volatility in the next 30 calendar days. The India VIX closed at 16.6 on March 31, 2016 as compared to 14.5 on March 31, 2015 registering an increase of 14.5 per cent, indicating investors' expectations of rising volatility.

The annualised volatility of the Sensex, measured by the standard deviation of log returns, increased to 17.0 per cent in 2015-16 from 13.5 per cent in 2014-15. A similar trend was also observed for Nifty which moved up from 13.5 per cent to 17.1 per cent during the same period (Table 1.6). The highest volatility among the other indices was observed in the S&P BSE small cap index followed by Nifty Next 50 and the Nifty 500 index.

Table 2: Trends in annualized volatility of Emerging stock market indices

EMERGING MARKETS	Annualized Volatility					
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Taiwan TWSE	15.8	21.6	14.3	11.6	11	16.3
Russia CRTX	29.4	36.6	24.7	25.8	40.4	36.5
Malaysia KLCI	9	10.9	7.2	8.7	8.4	11.6
South Korea KOSPI	15	25.9	14.6	12.5	9.4	13.7
Thailand SET	18.8	21.1	3.3	21.1	11.2	14.5
China SHCOMP	22.7	18.6	16.9	16.9	20.6	41
S. Africa JALSH	17.6	17.6	11	14.9	13.7	18.4
Brazil IBOV	19.9	25	20.8	21.4	25.7	26
Colombia IGBC	16.9	18.2	13.9	13.4	16.6	18.2
Hungary BUX	26.2	28.2	17.6	17.3	16.9	18.3
Egypt HERMES	26.5	23.9	23.5	19.7	20.6	25.2
Indonesia JCI	21.1	22	13.2	21.8	11.3	17.8
Argentina IBG	22.8	26.2	18.1	25.5	35	32.9
Chile IPSA	13.6	20.8	9.3	15.7	9.7	12.9
Mexico MEXBOL	14.3	19.7	11	16.4	13.1	13
India BSE Sensex	21.1	20.2	12.5	17.4	13.5	17
India S&P CNX Nifty	21.4	20.4	12.9	18.1	13.5	17.1

Chart1 : Trends in annualized volatility of Emerging stock market indices

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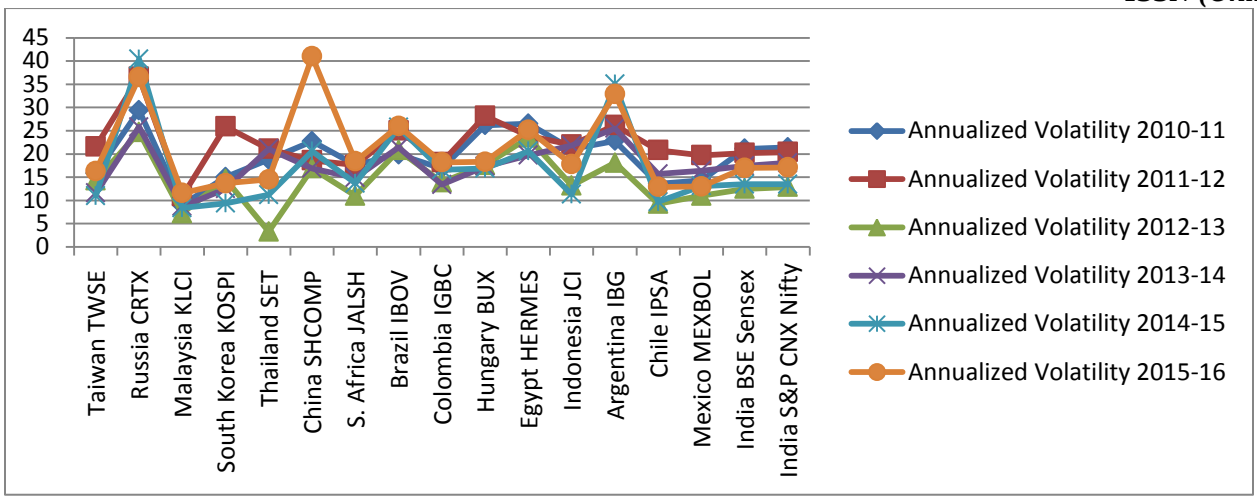

The annualized volatility was highest for Russian market (29.4 percent) followed by Egypt (26.5 percent), Hungary (26.2 percent), Japan (25.5 percent) and France (23.4 percent). On the other hand Malaysian market witnessed the lowest volatility of 9.0 percent during 2010-11.

Among the emerging markets, Russia depicted the highest volatility (36.6 percent), followed by Hungary (28.2 percent) and Argentina (26.2 percent). Compared to other emerging markets, India's stock price volatility was considerably lower during 2011-12.

In 2012-13, Among the emerging markets, Russia depicted the highest volatility (24.7 percent), followed by Egypt (23.5 percent) and Brazil (20.8 percent). The volatility in Indian benchmark indices was substantially lower on comparative markets scale as well as time scale.

In 2013-14, emerging markets, Russia depicted the highest volatility (25.8 percent), followed by Argentina (25.5 percent) and Indonesia (21.8 percent). The volatility in Indian benchmark indices was a tad higher than the comparative emerging markets.

In 2014-15, emerging markets, Russia depicted the highest volatility (40.4 percent), followed by Argentina (35.0 percent) and Brazil (25.7 percent). Volatility in Indian benchmark indices was on the lower side as compared to last year.

In the year 2015-16, the emerging markets, China depicted the highest volatility (41.0 per cent), followed by Russia (36.5 per cent), Argentina (32.9 per cent) and Brazil (25.7 per cent). In 2015-16, volatility in Indian benchmark indices was substantially lower than in the indices chosen for comparison showing signs of macroeconomic stability, resilience and optimism in Indian markets.

SUGGESTION BASED ON RESEARCH FINDINGS

1. The wider the swings in an investment's price, the harder emotionally it is to not worry;
2. Price volatility of a trading instrument can define position sizing in a portfolio;
3. When certain cash flows from selling a security are needed at a specific future date, higher volatility means a greater chance of a shortfall;
4. Higher volatility of returns while saving for retirement results in a wider distribution of possible final portfolio values;
5. Higher volatility of return when retired gives withdrawals a larger permanent impact on the portfolio's value;
6. Price volatility presents opportunities to buy assets cheaply and sell when overpriced;
7. Volatility affects pricing of options, being a parameter of the Black–Scholes model.

CONCLUSION

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

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REFERANCE:

1. Mr. Piyuesh Pandey (2015),Volatility patterns of stock returns in India, ISSN: 0971-1023, NMIMS Management Review, Volume XXVII April-May 2015
2. M. Thenmozhi1 and Abhijeet Chandra2(2013) India Volatility Index (India VIX) and Risk Management in the Indian Stock Market, W P/9/2013, NSE WORKING PAPER
3. JATINDER LOOMBA (2012), DO FIIS IMPACT VOLATILITY OF INDIAN STOCK MARKET ?, International Journal of Marketing, Financial Services & Management Research Vol.1 Issue 7, July 2012, ISSN 2277 3622
4. Debjiban Mukherjee(2007), Comparative Analysis of Indian Stock Market with International Markets, ©Great Lakes Herald – April 2007 Volume 1, Issue 1 by Great Lakes Institute of Management, Chennai
5. MARIE-HÉLÈNE GROUARD, SÉBASTIEN LÉVY, CATHERINE LUBOCHINSKY(2003), *Stock market volatility: from empirical data to their interpretation*, Banque de France • FSR • June 2003
6. Dr.Mrs. Punithavathy Pandian & Dr.Sr. Queensly Jeyanthi(2009), Stock Market Volatility in Indian Stock Exchanges, indiastat.com May–June, 2009 1 socio - economic voices
7. Saadet Kasman , Gülin Vardar, Gökçe Tunç(2011), The impact of interest rate and exchange rate volatility on banks' stock returns and volatility: Evidence from Turkey, S. Kasman et al. / Economic Modelling 28 (2011) 1328–1334
8. Anna Creti, Marc Joëts, Valérie Mignon, On the links between stock and commodity markets' volatility, A. Creti et al. / Energy Economics 37 (2013) 16–28 ,