

Comparative Analysis of Indian Stock Market with International Markets

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ABSTRACT

The activities at the stock market have increased and so are the international activities. The importance of these activities is also increasing at the global level. This paper has been prepared with the intention of capturing the global trends and patterns and the simultaneously flow of the global stock market, as the Indian stock market has been integrated with the world's top stock markets. For the purpose of the study, the stock markets and exchanges covered hereby are of India, USA, China, Taiwan, Japan, Hong Kong, South Korea and UK during post global financial crisis period. All these stock markets have their own history, trends and political and social background. For the purpose of studying the integration of the Indian Stock market with these international Stock exchanges, we include the National Stock Exchange and the Bombay Stock Exchange. The Time Period taken in this study is from 31st January 2014 to 31st January 2018 based on daily closing prices of stock market indices for all these selected countries.

I. INTRODUCTION

Since the LPG reforms, 1990-91, the Indian Stock Market and the International capital markets have faced lots of changes. India followed the policies of LPG to remove the trade barriers among the international stock markets. This thing has widened the scope for the Indian Capital Market. The LPG reforms have made the international market a local market for India. The main reasons of doing this study are the international financial crisis in the recent periods caused by localized crises such as the collapse of Russian bond market, the Asian financial crisis, and the very recent US financial crisis. However, the integration of the market depends upon the participants. They all must follow the same parameters of the valuating the financial instruments. The all participants should be treated equal in the market. There are number of barriers in the international stock market as tariffs, taxes, restriction on trading in foreign assets, information cost which hinders the free flow of capital from one market to another. So, with the integration of the market, the foreign investors can invest in the domestic market and the domestic investors can invest in the foreign markets.

Indian Stock Market

Since the LPG reforms, the Indian Stock Market has undergone a huge change. Along with that the International Stock Market has also changed. To meet the standard of the International Markets,

the Indian Markets i.e. NSE and BSE has also achieved the global standards. Introduction of electronic trading system, rolling settlement in the place of the account period settlement, increase in trading hours, dematerialization of shares, replacement of carry forward trading system by index based and script-

based futures and options, adoption of risk management through motivation at the clearing corporation etc. has globally standardized the Indian Stock Market. The advancement of the technology has increased the access of the investors to the market and also the transparency has increased. Liberalization has been allowed in the Indian Stock Market by allowing portfolio investment from foreign institutional investors (FIIs) in the form of pension funds, mutual funds, investment trust etc. since LPG

reforms. Also Indian investors have also been allowed to tap the foreign market with global depository receipts (GDRs), American depository receipts (ADRs) and foreign currency convertible bonds (FCCBs). Because of this thing, the integration of the Markets has taken place. So this Paper is studying that integration level of the Markets at global level.

Review of Literature

Sarat Dhal (2009) used multivariate co-integration analysis of stock prices indices of global markets of the US, the UK and Japan, Hang Kong Singapore India over the period covers April 1993 to July 2009. The results show that these markets shared single co-integration relationship and Indian Stock market played the key role.

Srinivasa Rao Gangadharan & C.A Yoonus (2011) examined the impact of the global financial crisis on the level of financial integration between the US (S&P 500) and Indian stock market (CNX S&P) using daily returns from March 2005 to November 2010. The study finds that there is no co-integration between the two indices.

Amalendu Bhunia & Amit Das (2011) examined interdependence between selected South –East countries stock markets and Indian stock market for the period from 1st August 1991 to 31st July 2011. The overall results indicate an increase in the integration between South East markets after global financial crisis.

Kanakarajammal & Paulraj (2014) in their study investigated short run and long run equilibrium relationship between Indian stock market with USA, China, Singapore and Germany. The data used in the study from January 2003 to December 2013. The study shows co-integration exist among the selected indices and also found that Indian stock market granger cause on U.S stock market and bidirectional causality exist between Singapore and Indian Stock market.

Kanakarajammal & Paulraj (2015) in their study empirically investigated the co-movement relationship between US, China and Indian stock market in the post reform era.

The data employed in the study January 1991 to December 2013. the study finds that Indian stock market is not co-integrated with china and US markets. The Indian market influences the china market.

Aman Srivastava (2015) using the time series global indices data ranging from January 1992 to April 2014 using US, Japan, Singapore, Hong Kong and India and the study suggests the presence of strong long term integration but the absence of short term integration of Indian stock markets with global markets.

Shivi Khanna (2016) examined the price behavior of Indian stock market with UK and Japan stock market prior and post global financial crisis and concluded that during the pre-crisis period both Japan and UK markets are integrated with Indian market, while in post crisis Indian markets were influenced by UK stock market, but not by Japan market.

Need of the Study

The International Market has now become a mutual platform. The different players from different backgrounds and countries are now in common market. The International Market is affected by different Markets of different countries. The influence of one market over the other plays the vital role. 9/11 attacks on Trade Towers affected the American trade. But the impact was on global level. The local markets of various countries were also affected directly and indirectly. Therefore, here we are studying the impact of different markets and the comparative study of the different markets. Hereby, the analysis of international stock market indices and correlation exists between the markets is studied.

Scope of Study

The following research is studying the stock markets and exchanges of India, USA, China, Taiwan, Japan, Hong Kong, South Korea and UK.

The Time Period taken in this study is from 31st January 2014 to 31st January 2018.

Basis of the study is daily closing prices of stock market indices for all these selected countries.

Objectives of the Study

To know the impact of the integration Indian stock market with that of major global stock market. The analysis of the impact is based on following:

1. Analyzing the co-relation of the various selected countries' stock market.
2. To study the Daily trends in the International Stock Markets through their indices.
3. Analysis of co-relation in long run.

Research Methodology

The method of collecting the data used here is the secondary. The above listed and the following data is available on the various stock exchanges of the different countries. The methodology of the study primarily includes analyzing trend movements. To represent the US stock market, main indices S&P 100, BSE SENSEX and NIFTY for India, FTSE 100 for UK, KOSPI for South Korea, NIKKIEI for Japan, Hang Seng for Hong Kong, TSEC for Taiwan and SSE for China.

The following methods are used for analysis.

1. Descriptive Analysis of Value of Stocks.
2. Graphical analysis of price indices.
3. Correlation between the different stock indices

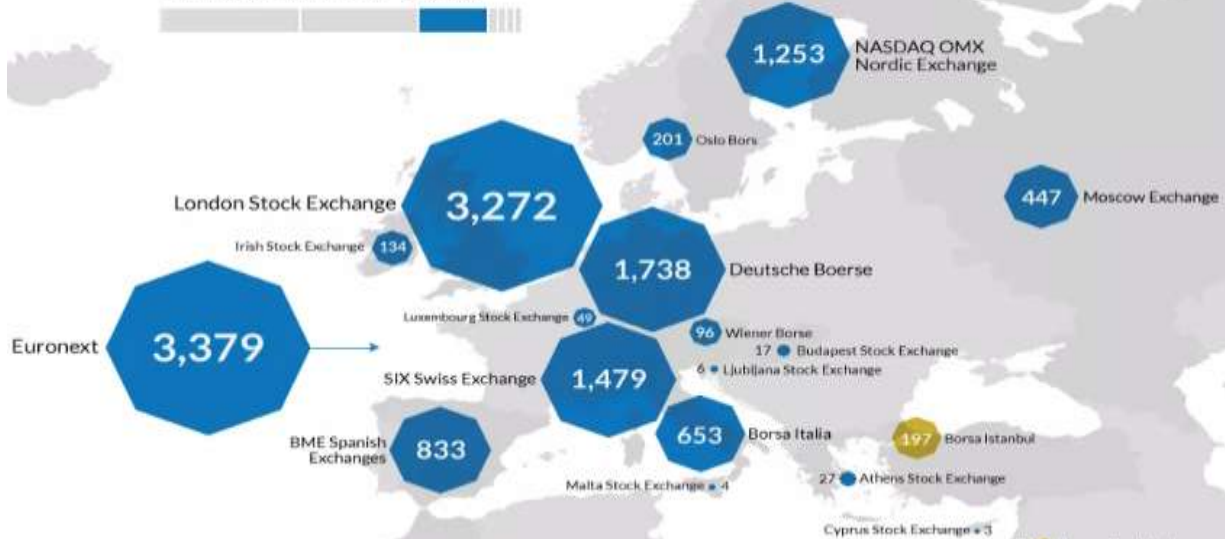
Analysis and Findings

Data: World's Major Stock Exchanges (Asia, Europe and America)



EUROPE

Number of exchanges **17**
Total Value (billions) **13,589**
Percentage of world total **19.5%**



NORTH AMERICA

Number of exchanges **5**
Total Value (billions) **\$28,059**
Percentage of world total **40.6%**

SOUTH AMERICA

Number of exchanges **5**
Total Value (billions) **\$933**
Percentage of world total **1.35%**



1. Descriptive Analysis

Table 1: The Value of Stocks of World's Major Stock Exchange Markets

Country	Stock Exchange	Indices Name	Value of Stocks
India	National Stock Exchange	S & P Nifty	1,450
India	Bombay Stock Exchange	Sensex	1,482
Honk Kong	Hong Kong Stock Exchange	Hang Seng	3,165
USA	New York Stock Exchange	NYSE	18,486
USA	Nasdaq Stock Exchange	NASDAQ	7,449
China	Shenzhen Stock Exchange	SZSE	3,424
China	Shanghai Stock Exchange	SSE	4,460
Korea	Korean Stock Exchange	KRX 100	1,265
Japan	Japan Exchange Group	Nikkie	4,910
UK	London Stock Exchange	FTSE	3,272
Taiwan	Taiwan Stock Exchange	TAIEX	750

The highly valued Stocks in the world are of New York Stock Exchange, followed by the other American Stock Exchange called NASDAQ, which clearly justifies the dominant position of America in the International Stock Markets. Among the above listed stock exchanges, Indian Stock Exchanges, Bombay Stock Exchange and National Stock Exchange lies on 8th and 9th position respectively. Korean Exchange is on 10th position and the last position is of Taiwan Exchange.

Table 2: The Indices of the Major Stock Exchange Markets

Stock Exchanges	2014	2015	2016	2017	2018
S & P Nifty	6,090	8,809	7,437	8,641	11,069
Sensex	20,513	29,182	24,870	27,655	35,965
Hang Seng	22,035	24,507	19,683	23,374	33,154
NYSE	9,967	10,537	9,427	11,283	13,637
NASDAQ	4,103	4,635	4,613	5,666	7,240
SZSE	2,202	3,434	2,946	3,388	11,160
SSE	2,033	3,210	2,737	3,159	3,558
KRX 100	4,175	4,022	3,633	4,221	5,344
Nikkie	14,914	17,674	17,518	19,467	23,808
FTSE	6,510	6,825	5,931	7,099	7,533
TAIEX	8,462	9,361	8,145	9,448	11,104

The rate of growth of the Indices of Shenzhen Stock Exchange of China is more than all other Stock Exchange Indices. The indices of the SZSE in 2016 were 2,202 and now in 2018 it is 11,160. However, in current period, Bombay Stock Exchange is leading the world's top exchanges in case of Indices followed by Hang Seng Exchange of Honk Kong. Korean based Stock Exchange KRX 100 is on last position in case of Indices.

Table 3: Comparative Central Tendency of all the Stock Exchanges

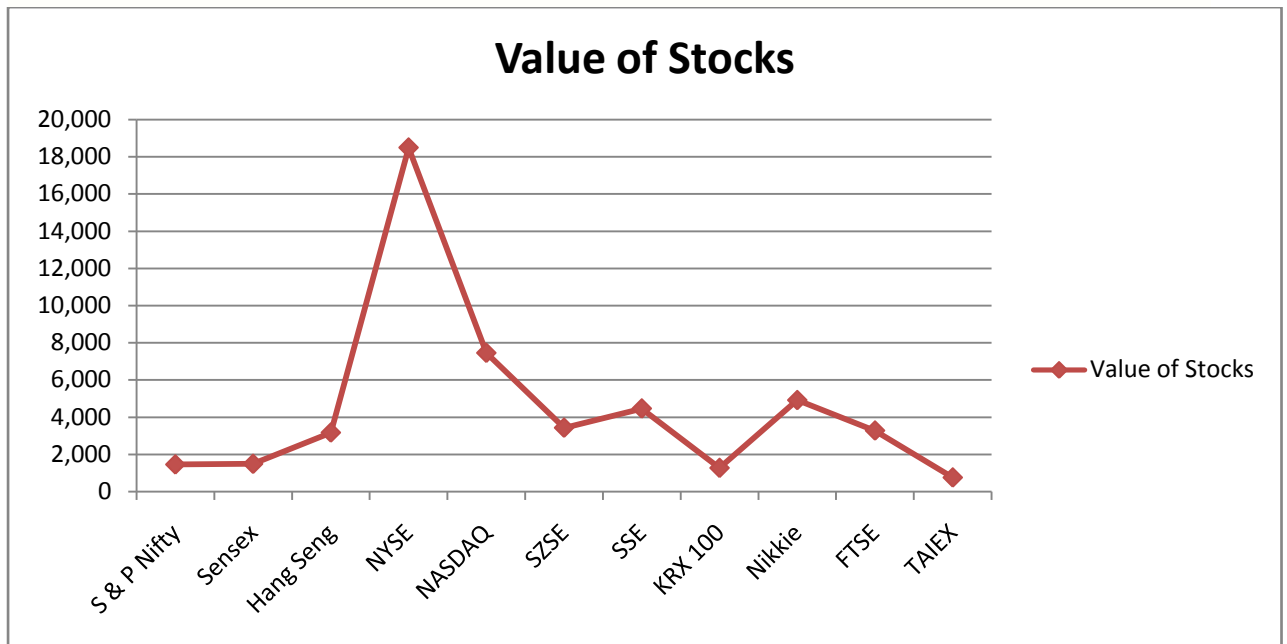
	Mean	Median	St. Deviation
S & P Nifty	8,409	8,641	1,845
Sensex	27,637	27,655	5,704
Hang Seng	24,551	23,374	5,134
NYSE	10,970	10,537	1,642
NASDAQ	5,251	4,635	1,248
SZSE	4,626	3,388	3,686
SSE	2,939	3,159	585
KRX 100	4,279	4,175	639
Nikkie	18,676	17,674	3,296
FTSE	6,780	6,825	605
TAIEX	9,304	9,361	1,153

The central tendency of the various Stock Exchanges' Indices is measured in form of Mean, Median and Standard Deviation. It is again lead by Bombay Stock Exchange, followed by Hang Seng. The lowest Mean value is of Shanghai Stock Exchange of China.

2. Graphical Analysis

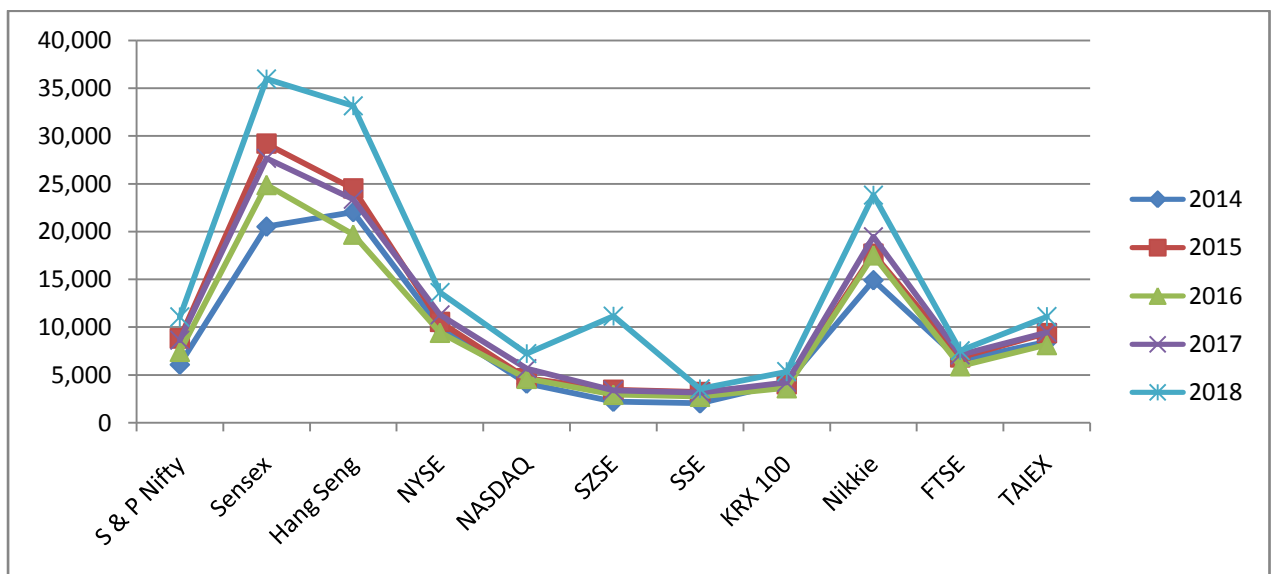
To show the movements of the indices of the selected countries stock markets, following graphical presentation has been made.

Figure 1: The Value of the Various Stock Exchanges



The above graph is showing the comparative level of values of the Stocks of different countries.

Figure 2: Co-movement of India's Stock Indices with developed countries Stock Indices in the Period 2014-2018



The comparative analysis of the Stock Indices of the world's top Stock Exchanges has been presented in the above graphical representation. The top position is of BSE, Hang Seng and Nikkie. The rate of growth of the SZSE is shown here which is higher than others. The current lowest position is of SSE, KRX 100 and FTSE (UK Stock Exchange).

3. Correlation Analysis

Table 4: Showing the Correlation between India's Stock Prices with other Countries' Stock Prices.

	S & P Nifty	Sense x	Hang Seng	NYS E	NASDAQ Q	SZSE	SSE	KRX 100	Nikke e	FTSE	TAIEX
S & P Nifty	1	0.997	0.875	0.893	0.914	0.878	0.951	0.760	0.957	0.794	0.931
Sensex	0.997	1	0.879	0.88	0.898	0.885	0.944	0.754	0.946	0.769	0.923
Hang Seng	0.875	0.879	1	0.968	0.883	0.951	0.693	0.964	0.862	0.878	0.975
NYSE	0.893	0.88	0.968	1	0.956	0.933	0.735	0.961	0.920	0.923	0.984
NASDAQ	0.914	0.898	0.883	0.956	1	0.928	0.796	0.873	0.984	0.812	0.923
SZSE	0.878	0.885	0.951	0.933	0.928	1	0.694	0.921	0.922	0.734	0.912
SSE	0.951	0.944	0.693	0.735	0.796	0.694	1	0.536	0.872	0.682	0.801
KRX 100	0.761	0.755	0.964	0.962	0.873	0.921	0.537	1	0.809	0.872	0.927
Nikkie	0.957	0.947	0.862	0.92	0.985	0.922	0.872	0.809	1	0.761	0.908
FTSE	0.794	0.769	0.878	0.923	0.812	0.734	0.682	0.872	0.760	1	0.937
TAIEX	0.931	0.923	0.975	0.984	0.923	0.912	0.801	0.927	0.908	0.937	1

The study of relationship between BSE Sensex and other selected indices indicates that there is a significant relationship between BSE Sensex and other world major indices. In all the cases correlation is significant at 1% level of significance, indicating that strong integration of Indian stock market with major world markets in the post global financial crisis. The correlation of Indian stock market is weak with KRX 100, Korean Stock Market and strong correlation with China, Japan and Taiwan Stock Markets. However, no conclusion can be drawn on the basis of analysis of correlation and thus, high significant correlation warrants a detailed study to find whether the phenomenon is short lived or is valid in the long run as well. Granger causality and co integration techniques need to employ to be check the correlation results further for analysis of short run and long run effects respectively.

II.CONCLUSION

The results of this study strongly support the view that, there is a substantial integration between Indian and International financial markets. BSE-Sensex has witnessed a greater fluctuation which has been indicated by a very high Co-efficient of variation compared to other select indices. Sensex, the Indian bench mark index, has shown strong association with China, Japan and Taiwan's Composite Index. The study reveals that, there is a poor integration of BSE- Sensex with NASDAQ and KRX 100. Indian stock market exhibited strong positive correlation and perfect price correlation with global stock markets. In Asia pacific region, when compared to

Hang Kong, correlation of the Indian market with global markets is not so attractive. Chinese stock index i.e., SSE Composite index has exhibited strong correlation with BSE- Sensex and with Hang Seng. Japanese stock index i.e., Nikkei225 has strong integration with world major stock markets. It has strong correlation with all the select indices. The European index i.e., FTSE100 has exhibited strong correlation with all the US stock market indices and with Nekkei225, the Japanese stock market index.

The growth of the Indian economy has been noticed in recent years. The same thing has been witnessed in the Stock Market trends.

The study concludes that Indian stock market which has linked with stock markets of all the countries is globally integrated over the next 10 to 15 years, need to move towards far greater integrated global financial world and policymakers in India need to rethink the framework for such integration.

REFERENCES

- [1.] Kanakarajammal & Paulraj (2014). "A study on Co-Movement Relationship between Indian, China and US stock markets in the post reform Era". *SMART Journal of Business Management Studies*, 10(2), pp.64-76.
- [2.] Sarat Dhal (2009, Dec). "Global Crisis and the Integration of India's Stock Market". *Journal of Economic Integration* 24(4), pp.778-805
- [3.] Shivi Khanna (2016). "Financial Crisis effect on Cointegration of Indian Stock market With Japan and UK". *International Journal of Emerging Research in Management and Technology*, 5(2), pp.20-26
- [4.] **Websites:**
- [5.] <http://money.visualcapitalist.com/all-of-the-worlds-stock-exchanges-by-size/>
- [6.] https://www.google.com/search?q=INDEXHANGSENG:HSI&tbm=fin#scso=uid_fdmkWuG1BcLlvGSwl46ADw_5:0
- [7.] <https://www.cnbc.com/quotes/?symbol=.IXIC>
- [8.] <http://www.londonstockexchange.com/exchange/prices-and-markets/stocks/indices/summary/summary-indices.html?index=UKX>
- [9.] <http://www.moneycontrol.com/sensex/bse/sensex-live>
- [10.] <https://www.google.co.in/search?dcr=0&q=nyse%20index%20live&ved=0ahUKEwizm-DY9uPZAhuHTY8KHV9vBY0QsKwBCLQBKAewAA&biw=1366&bih=662>
- [11.] <https://liveindex.org/shenzhen-component/>
- [12.] <https://liveindex.org/taiwan-weighted/>
- [13.] www.bseindia.com
- [14.] www.nse-india.com
- [15.] www.ebsco.com
- [16.] www.nyse.com