

## **Comparative Analysis between the Indian Stock Market and Global Stock Market**

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### **Abstract**

The stock market of any economy serves as an economic barometer to check the condition of the economy. Indian capital markets have undergone tremendous change since India adopted Liberalization and Globalization. This change has made various stock markets to integrate with other global counterpart seeking data and their influence on other international markets. This paper focuses on trend movements of eight global market indices, including the correlation with other, descriptive statistics, Skewness and kurtosis for the period of 10 years from 2009 - 2019. It helps the investors to know in which global market he can invest to gain maximum profit by diversifying the portfolio.

**Keywords:***Stock Market, Correlation, Indices, Global, Descriptive Statistics, Skewness.*

### **1.Introduction**

Indian Stock Market, Bombay Stock Exchange BSE is growing at a very fast rate. BSE now ranks 10<sup>th</sup> place in terms of market capitalization. Since 1990's when India adopted liberalization and globalization policies dismantling the economic barriers. It has grown multifold. The integration among market has grown stronger. All the markets are related to each other. One market impacts others as a recession or economic meltdown in the USA market leads to meltdown in other economic markets. Basically, this led to a rise in demand for data regarding the global market vis-à-vis knowing the impact on other markets. For investors, it is very much required to know how a market behaves globally. So, a comparison is required among the top global market to know the scenario of inter-market linkages.

## **2. Literature Review**

Kaur.R (2017)<sup>1</sup> in her study titled “Comparative Analysis of Indian Stock Exchange and Major Index with Global Stock Exchange and Their Major Index” researcher uses the index of Hang Seng, Shanghai Composite, Dow Jones, Nikkei 225, Sensex and Nifty tries to compare stock market in qualitative and quantitative terms. Qualitative terms include listing standard, market capitalization, Lockup requirements, number of listing securities, Settlement, Equity market, listing fees, circuit filters, listing agreement, Timeline of going Public and accounting standard. He finds Sensex is highly correlated with Hang Seng 0.931485 followed by Shanghai Composite with 0.708363.

ChaitanyaCh.(2015)<sup>2</sup> in her paper “Comparative Analysis of International Stock Markets” focuses on the trend movement of Global & Asian stock indices. For the study, the researcher has taken five stock markets. The researcher used correlation with each other market indices, kurtosis, descriptive statistics and skewness. The researcher found BSE Sensex is highly correlated with Hang Seng followed by Shanghai composite. S&P 500, Nikkie and Sensex are negatively skewed whereas Hang Seng and Shanghai Composite are positively skewed.

Gupta.N&Agarwal.V (2011)<sup>3</sup> “Comparative Study of Distribution of Indian Stock Market with Other Asian Markets” the researcher tries to find the correlation between Sensex and five Asian stock indices. The researcher finds a positive correlation between Sensex and Korean stock exchange and a very weak negative correlation between the Hong Kong stock market. Sensex shows platykurtic distribution good for investment.

Menon.S (2018)<sup>4</sup> studied “A Comparative Study of the Indian Stock Market with Two International Stock Markets between 2012-17” The researcher used descriptive statistics, correlation, regression and graphical analysis for the study of 2 stock markets. It was found in the study that NYSE has a positive correlation with the Bombay Stock Exchange.

Singh.S&Kumar.D(2018)<sup>5</sup> studied “Comparative Analysis of Indian Stock Market with International Markets” with eight nos. of stock exchange to see the integration between the stock exchanges around the globe. The researcher concluded that there exists a poor integration of Sensex with NASDAQ and KRX 100. There is a strong association with China, Japan and Taiwan composite index. In the Asian market context, SSE composite has a strong correlation with Sensex and Hang Seng. Japanese stock index Nikkei225 has a strong integration with the global stock market.

Jeyanthi.B.J&Antony.M.J(2015)<sup>6</sup> “Comparative Analysis of Indian Stock Market With Asia Pacific Developed Markets” the researcher tries to find out the market integration in the Asian pacific region before and after the financial crisis. The researcher concluded that the Indian stock market offers the highest returns i.e 0.2246% per day at a reasonable risk level. He also finds that the Indian stock market is not cointegrated with the equity market of Japan, Hong-Kong, Singapore, and Australia. Investors of these markets can get the benefit of portfolio diversification. In the short run, it reduces the benefits of diversification.

## **3. Need and Objectives of the Study**

The integration of the Indian Stock market with the global market made it necessary to know where it stands among global counterparts. For example, the recession which happened in the

USA caused the global economic meltdown of the market across the globe. Now all the economy has become a village where things are interrelated with each other. This paper will focus on the following objectives.

- To study market trends, record the similarities and patterns in the movement of the Indian stock market in comparison to the global stock market.
- To find the correlation between various market indices with Sensex.

#### 4. Scope of the Study

This research covers eight select global market indices and the analysis is done for the 10 years period from year 01/01/2009 to 01/01/2019.

**Table No -1**

**Showing Various Stock Exchanges Along With Market Capitalization Value with Monthly Trade Volume**

| <b>Name of the Stock Exchange</b> | <b>Abbreviation</b> | <b>Country/Region</b> | <b>Market Capitalization (In US\$ bn)</b> | <b>Monthly Trade Volume (In US\$ bn)</b> |
|-----------------------------------|---------------------|-----------------------|-------------------------------------------|------------------------------------------|
| New York Stock Exchange           | NYSE                | United States         | 30,923                                    | 1,452                                    |
| NASDAQ                            | Nasdaq              | United States         | 10,857                                    | 1,262                                    |
| Japan Exchange Group              | Nikkei              | Japan                 | 5,679                                     | 481                                      |
| Shanghai Stock Exchange           | SSE                 | China                 | 4,026                                     | 536                                      |
| Hong Kong Stock Exchange          | SEHK                | Hong Kong             | 3,936                                     | 182                                      |
| London Stock Exchange Group       | LSE                 | United Kingdom        | 3,767                                     | 219                                      |
| Toronto Stock Exchange            | TMX                 | Canada                | 2,095                                     | 97                                       |
| Bombay Stock Exchange             | BSE                 | India                 | 2,056                                     | 210                                      |

Source: [https://en.wikipedia.org/wiki/List\\_of\\_stock\\_exchanges](https://en.wikipedia.org/wiki/List_of_stock_exchanges)

#### 5. Methodology

This study is purely based on secondary data obtained from online sources. Data has been collected from the Yahoo Finance Historical data list. The study primarily includes analyzing the movements in addition to doing correlation, descriptive statistics, and finding skewness and kurtosis as well with the help of the same data set.

## 6. Analysis & Interpretation

Figure No -1

Showing Trends of Various Stock Market Indices

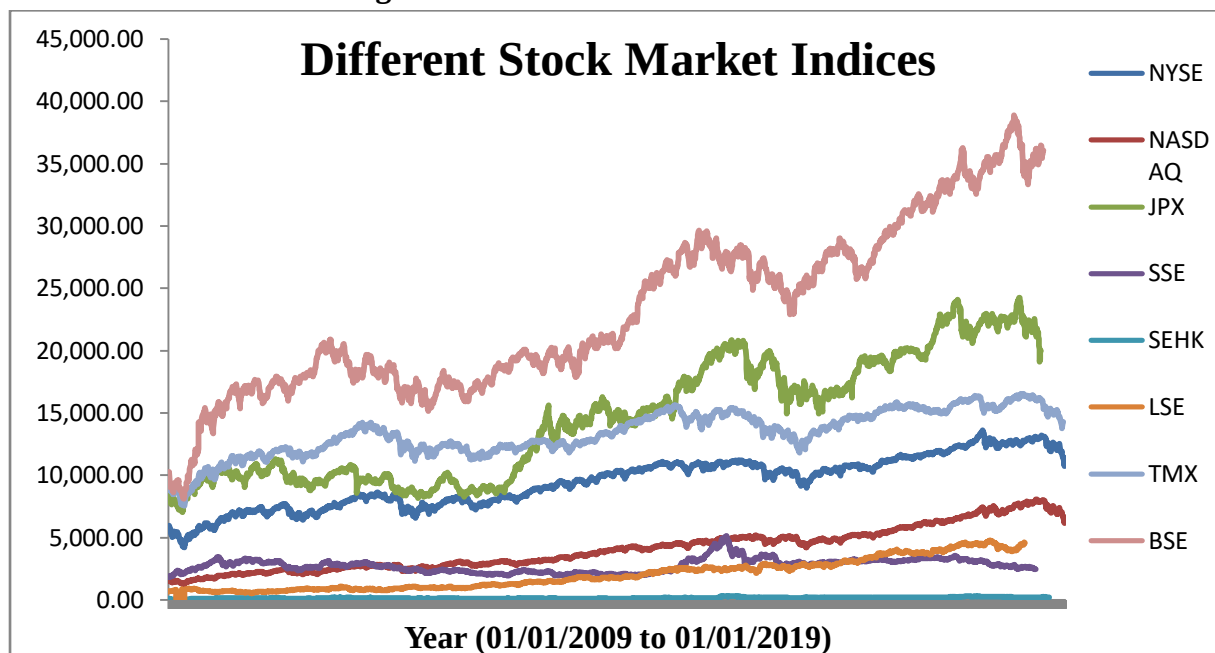


Table No -2

Showing Correlation of different Stock Exchanges with other Exchanges

|        | NYSE | NASDAQ | NIKKEI | SSE  | SEHK | LSE  | TMX  | BSE |
|--------|------|--------|--------|------|------|------|------|-----|
| NYSE   | 1    |        |        |      |      |      |      |     |
| NASDAQ | .962 | 1      |        |      |      |      |      |     |
| NIKKEI | .931 | .942   | 1      |      |      |      |      |     |
| SSE    | .353 | .382   | .516   | 1    |      |      |      |     |
| SEHK   | .799 | .811   | .817   | .685 | 1    |      |      |     |
| LSE    | .920 | .976   | .943   | .429 | .794 | 1    |      |     |
| TMX    | .940 | .877   | .844   | .412 | .825 | .834 | 1    |     |
| BSE    | .950 | .966   | .936   | .476 | .852 | .951 | .917 | 1   |

From the above table no -2, BSE is highly correlated with .966 NASDAQ, followed by .951 London Stock Exchange LSE, .950 New York Stock Exchange NYSE, .936 NIKKEI, .917 Toronto stock exchange TMX, .852 Hang Seng SEHK it is least correlated with .476 Shanghai Composite SSE.

Table No -3

Showing the Descriptive Statistics Related to Different Stock Exchanges

|                   | NYSE           | NASDAQ         | NIKKEI          | SSE           | SEHK       | LSE            | TMX            | BSE             |
|-------------------|----------------|----------------|-----------------|---------------|------------|----------------|----------------|-----------------|
|                   | Column- 4      | Column - 5     | Column - 6      | Column - 7    | Column - 8 | Column - 9     | Column - 10    | Column - 11     |
| Mean              | 9484.71        | 4133.71        | 14573.99        | 2784.33       | 167.22     | 2039.61        | 13434.70       | 23180.12        |
| Median            | 9873.27        | 4061.51        | 14664.50        | 2807.23       | 166.80     | 1779.70        | 13440.25       | 20852.38        |
| Std.<br>Deviation | 2069.02        | 1720.71        | 4855.05         | 543.90        | 48.47      | 1223.01        | 1793.35        | 6749.60         |
| Variance          | 4280829.<br>99 | 2960851.<br>70 | 23571523.<br>63 | 295823.6<br>6 | 2349.49    | 1495758.<br>77 | 3216114.<br>18 | 45557121<br>.53 |
| Skewness          | -0.16          | 0.50           | 0.21            | 0.75          | 0.53       | 0.57           | -0.46          | 0.31            |
| Kurtosis          | -0.90          | -0.73          | -1.33           | 1.26          | 0.00       | -0.88          | -0.10          | -0.74           |

Column4: The Mean calculated here is 9484.71 with a standard deviation of 2069.02. Kurtosis is -0.90 which is less than 3 therefore it is Platykurtic. Skewness is -0.16 i.e. it is negatively skewed (left tail).

Column5: The Mean calculated here is 4133.71 with a standard deviation of 1720.71. Kurtosis is -0.73 which less than 3 is therefore it is Platykurtic. Skewness is 0.50 i.e. it is positively skewed (right tail).

Column6: The Mean calculated here is 14573.99 with a standard deviation of 4855.05. Kurtosis is -1.33 which is less than 3 therefore it is Platykurtic. Skewness is 0.21 i.e. it is positively skewed (right tail).

Column7: The Mean calculated here is 2784.33 with a standard deviation of 543.90. Kurtosis is 1.26 which is less than 3 therefore it is Platykurtic. Skewness is 0.75 i.e. it is positively skewed (right tail).

Column8: The Mean calculated here is 167.22 with a standard deviation of 48.47. Kurtosis is 0.00 which is less than 3 therefore it is Platykurtic. Skewness is 0.53 i.e. it is positively skewed (right tail).

Column9: The Mean calculated here is 2039.61 with a standard deviation of 1223.01. Kurtosis is -0.88 which is less than 3 therefore it is Platykurtic. Skewness is 0.57 i.e. it is positively skewed (right tail).

Column10: The Mean calculated here is 13434.70 with a standard deviation of 1793.35. Kurtosis is -0.10 which is less than 3 therefore it is Platykurtic. Skewness is -0.46 i.e. it is negatively skewed (left tail).

Column11: The Mean calculated here is 23180.12 with a standard deviation of 6749.60. Kurtosis is -0.74 which is less than 3 therefore it is Platykurtic. Skewness is 0.31 i.e. it is positively skewed (right tail).

Among the market indices of various stock exchanges, it is clear that Hang Seng or SEHK is balanced as it has minimum risk i.e. Standard deviation is 48.47 with mean 167.22 followed by Shanghai Composite with standard deviation 543.90 and mean 2784.33.

All the index are Platykurtic that is its value is less than three that further means that the returns are less clustered around mean.

## **7.Conclusion**

It is clearly found from the study that BSE is highly correlated with (.966) NASDAQ, followed by (.951) London Stock Exchange LSE, (.950) New York Stock Exchange NYSE, (.936) NIKKEI, (.917) Toronto stock exchange TMX, (.852) Hang Seng SEHK it is least correlated with (.476) Shanghai Composite SSE. Further, Descriptive statistics clearly show that Hang Seng has the lowest standard deviation among the studied stock market followed by the Shanghai Composite. The Kurtosis values of the concerned indices are saying that all are Platykurtic i.e. being less than 3 in value. The returns distribution of all these indices is less clustered around the mean.

## **References**

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