AN EMPIRICAL STUDY OF TESTING FINANCIAL INTGRATION BETWEEN INDIAN AND NEW YORK STOCK MARKET

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PURPOSE
THE present paper made an attempt to investigate financial integration between NSE and NYSE stock market taking daily closing index of NYSE and NSE. A saying goes like, when America sneezes, world catches cold. Therefore, we tried to testify that at what extent this statement is applicable in respect of Indian market and further study inter linkages and inter relationships between them.

Design/Methodology/Approach: *We have taken one stock exchange from both the countries. New York Stock Exchange (NYSE) has been taken for America's representative exchange and National Stock Exchange (NSE) has been taken as the representative exchange of India. The monthly closing stock index price has been taken starting from January 2000 to December 2016. The data mainly collected from NYSE website and NSE website. The Descriptive Statistic is used to summarize the general trend and pattern. For checking data series stationarity, the line graph was prepared and we used the log value of indices and further testified the data with Augmented Dickey-Fuller (ADF) test under unit root hypothesis. After ADF test, Granger Causality was applied and for causation and for long-term relationship we conducted Johansen Co-integration test. The data analysis was done with EViews 9.*

Findings: *Descriptive statistics showed that stock market of India provide lower returns in compare of New York stock market. Testing results of Granger Causality explained that return at NYSE does Granger Cause return at Indian exchange that infers the returns on NSE is influenced more with NYSE index co-movements but not vice versa because NSE does not Granger Cause return at NYSE. Johansen Co-integration speaks about co-integration between them which means that movements in NYSE index influences NSE market and both having co-movements.*

Research Limitations/Implications: *We took the sample data for the period January 2000 to December 2016. A larger sample data could also be taken in the future and although only one stock market index from both the countries was taken but one more major stock exchange could also be taken for the same study like Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) and New York Stock Exchange (NYSE), National Association of Securities Dealers Automated Quotations (NASDAQ).*

Practical Implications: *The study is providing the basis for making government policy keeping in mind this financial integration between NSE and NYSE. Not only this, various market participants*

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may use this study conclusion in order to formulate different investment strategy especially keeping in mind the fluctuations happening in Indian and American market.

Originality/Value: *The study is unique and unpublished and having originality.*

Key Words: *India-New York Inter-relationship, Stock Market, Integration, Granger Causality.*

Introduction

Growth of a country is dependent upon growth of Industries in the country and growth of industries are further dependent upon condition of capital market of the country because this market is going to give an element which is most important for the success and failure of every industry i.e., funds. Funds work as a life blood for an industry, more particularly for a company. The capital market helps the companies to raise funds for satisfying their fund requirement need. Basically capital market of a country works as a channel for creating demand and supply of the debt and equity capital. It's always been a key part of overall financial system of every economy. On one hand primary market helps raising the funds for long-term requirements of corporates and institution and on the other, secondary market provides buying and selling the securities already issued in primary market and hence provide liquidity to investors. This market not only boost growth of different sectors of economy but also channelize the surplus funds (savings) to the deficient fund (borrowings) units of society and thereby enables the optimum allocation of capital resource scarce in nature thus provide the long-term funds for sustainable economic growth. As we know that, a sound and efficient stock market is now need of the hour for increasing growth of economy manifold therefore, the focus has been shifted now on establishment of variables which determine the stock returns.

New York stock exchange (NYSE) is the biggest exchange of not only America but of the whole world with the market capitalization of US $ 19.3 million. It is the finest and most advanced and automated exchange of the world. In line with this, India is also having one more sophisticated stock exchange which is National Stock Exchange (NSE). These two are leading stock exchange in their domain. USA and India are not only neighboring countries but still they enjoy a good economic and political relationship between each other from years. On one hand, India enjoys strategic position in Asia region and on the other USA is perceived as the global economy of the world. This paper made an attempt to explore existence of dynamic inter-linkages and causal relationship between NYSE and NSE market and further identifying scope of integration between NYSE and NSE market due to establishment of long-term relations between both the countries and to know whether there is any significant impact on market of these countries even if they have a good relations in trade and politics.

About Indian and American Stock Market

National Stock Exchange

In India, there are basically two leading stock exchanges the National Stock Exchange of India Limited (NSE) and Bombay Stock Exchange (BSE) but for the present article only NSE has been taken as it is being considered as the real barometer with the market capitalization US $1.65 trillion ranked 12th in the world. NSE, established in 1992, being India's first demutualized electronic exchange, not only provide more modern and screen-based fully-automated trading system but also makes the trading facility easier to investors who are spread across India. NSE's flagship index is *CNX Nifty* which incorporates 50 stock in index, which is used by the investors extensively in and around India and world for analyzing the Indian capital markets. NSE's is having state-of-the-art application with record up time of 99.99% which processes messages around 450 million daily having sub millisecond response time.

New York Stock Exchange

New York stock exchange has history of 224 years, established in May, 1792. Its history can be traced to Buttonwood Agreement. Earlier securities were intermediated by auctioneers. New York

Stock Exchange (also called as Big Board) provides a way for sellers and buyers to trade in shares in registered companies on exchange. Earlier continuous auction format was practiced which helped traders to execute transactions on behalf of investors but this auction process was moved into a fully automated wireless computers in 1995.New York Stock Exchange Composite Index was created in mid-1960s taking base of 50 points which was equal to 1965 yearly close. It was an initiative to reflect all the stocks traded at exchange instead of just taking 30 stocks which were included in Industrial Average of Dow Jones. For raising the profile of NYSE Composite Index, it was set to new base 5,000 points in 2003. It's flagship indices are S&P 500, Dow Jones Industrial Average, and NYSE Composite. Being first among the world's top exchanges, it has now more than 2,400 listing of companies with market cap US $ 19.3 trillion. It works not only like a financial barometer of America, but also for the world because if it sneezes world catches cold. So, it is strategically more important at eh global perspective. Although, America has two stock exchanges NYSE and NASDAQ but in the current study we have opted only NYSE because it will reflect true sense while comparing it with NSE.

Review of Literature

A study conducted by Ripley (1973) founded low correlations between national stock markets, supporting the paybacks of international diversification. Chaudhuri (1997) investigated the relation among six Latin American countries for the period of 1985-1993 by using the Engle-Granger, American countries. Granger causality, and co-integration and found long-term relationship among all the six Latin America country's group. Bekaert & Harvey (1995) tried to explore the interdependence of the equity market in Pakistan with seven major equity markets of UK, USA, France, Japan, Germany, Singapore, and Hong Kong. They examined the integration through Engle and Granger co integration technique using the weekly stock indices from the period January 1988 to December 1993. Their analysis revealed, that there is a little support for the integration of Pakistani equity market with the other international nations markets. They concluded that, there exist an opportunity for diversification for international investors in Pakistan. As per the study conducted by Campbell & Hamao (1992), in perfectly integrated markets, all assets with like risk exposure also command equal expected returns. Karolyi (1992) and Harvey (2001) investigated the time-varying linkages among the different international stock markets and they found that, when there is a dominance of global factors on domestic factors, a possibility of increase in the correlation. In addition to this, many authors documented that, the correlations are found to be higher when the markets simultaneously go down which further reduces insurance effect from the international diversification as per the study of Longin & Solnik (1995). Using matched sample design where the companies are matched by the size and the industry from countries like Canada, Australia, and US capital markets, Faff & Mittoo (2003) investigated whether integration of capital market varies across industries and the geographical proximity. The study was conducted from 1983 to 1997 period and the multi-factor pricing framework was tested. Results of study support pricing of Australian stocks being different from the Canadian and U.S. counterparts.

Mukhopadhyay & Sarkar (2003) conducted an analysis for the purpose of understanding the influence of the different macroeconomic factors on the returns of the Indian stock market returns before and after the liberalization of the market. They found that, before the liberalization period (198-1995), the money supply growth, inflation, real economic activity, NASDAQ-index, and FDI were found to be significant in explaining the variations in the indian stock returns, but this phenomenon was found not significant after the liberalization period (since 1995). Mukherjee (2007) captured the similarities, patterns, and trends in activities and movements of indian stock market in comparison to its international counterpart. The study covered Tokyo Stock exchange (TSE), Hong Kong Stock exchange (HSE), Russian Stock exchange (RSE), New York Stock Exchange (NYSE), and Korean Stock exchange (KSE) from the backdrop of socio- politico-economic backgrounds. As a part of indian stock market, both BSE and NSE were used. The study was conducted using correlation and regression, from January 1, 1995 to July 31, 2006 by comparing the different parameters viz; market capitalization, number of listed securities, listed agreements, circuit filters, and settlement to testify that the Indian markets have become much

integrated with its global counterparts. The findings showed that, the stock markets do impact each other, more so in the recent times, i.e. post-2000. Aktar (2009) examined the co-movement of stock prices among the Russia, Turkey, and Hungry's market with the help of using daily index value from January 2000 to October 2008 using the different testing tools like JJ Co Integration, Vector Error Correction Model, Granger Causality Test. The findings of the study pointed out that, there is an existence of co integration among stock indices of Russia, Turkey, and Hungry. Furthermore, the Granger Causality test applied revealed that, there was bidirectional causality for the Turkish and Russian stock indices, on the other hand, Hungarian stock market Granger cause to Turkish stock market, but not vice versa. Chittedi (2009) examined integration of BRIC economies and further their integration with the developed countries markets such as the UK, Japan, and US using Johansen's cointegration, Granger's causality and Error Correction Mechanism/Model (ECM). It was found that, there is cointegration between BRIC countries and developed countries, namely, the USA, UK, and Japan. The results of ECM revealed that the NIKKEI, SENSEX, BOVESPA, and FTSE are significant. It infers that these markets share forces of short-run adjustment to long-run equilibrium. The study conducted by Sheu & Liao (2011) analysed rising pattern of integration and causal relationships among BRIC's stock markets and US market. Their empirical study showed that the stock markets of Russia, China, and Brazil have started exerting significant influences on the US Dow Jones exchange to some extent after the period of 2006 and Dow Jones index has continued to play a vital and dominant role in Granger causing shifts in the emerging markets of India, China, and Russia. Their findings speak about the time-varying nature of the non-linear Granger causality and co-integration relationships and apart from that, it also indicated that the potential benefits from international risk diversification may have gradually diminished within these groups of markets.

Vieito, Bhanumurthy, & Tripathi (2013) tried to explore weak-form efficiency in most developed countries of the world (G-20) along with measuring impact of 2007 financial crisis in markets of these countries, in terms of efficiency. They explored the emergence of strong contemporaneous effects across all international markets (barring Saudi Arabia) consequence of 2007 crisis may be just because of intra-day activity increment international across world markets. They found market index was inefficient while the individual stocks were efficient. Venkatesh (2013) explored the dimension of patterns, similarities, and trends in the movements and the activities of the BRICS markets to its other counterparts. Based on the secondary data, this paper is focused to help the investors in knowing the development of various markets among the BRICS nations and showing a better path to invest. He concluded in his study that, in general, BRICS do not constitute a homogeneous alliance. Although, their economic and political position in respect of international development politics and policies should not be underestimated by EU institutions. The heterogeneity among BRICS seems to make development partnerships with BRICS blocks rather complicated and less attractive. Especially, China and Russia are differing – one being the next superpower, the other a former superpower – and need to be addressed in different ways. Thus, this study validates the popular belief that the markets in general and Indian market in particular, is more integrated with other global exchanges from 2002-03 onwards.

Tripathi & Kumar (2014) studied the long term relationship between the inflation and stock returns in BRICS markets with the help of panel data for the period from March 2000 to September 2013. They used ADF, PP, and KPSS unit root tests for the purpose of checking the stationarity of the data and they found non-stationary in the characteristic of the data. They also examined the long term co-integrating relationship, by using Pedroni Panel Co Integration Test between stock index values and inflation rates and found no long term co-integrating relationship. Their correlation results revealed that, there is a significant negative relationship between the stock index and the inflation rate for Russia and there is a significant positive relationship for India & China. They concluded that, the changes in the inflation may bring some sort of short run movement in the stock returns but it is certain that the equity does not seem to be a good hedge against the inflation in the emerging BRICS markets at least in the long run. Although study conducted by Bhanumurthy & Singh (2014) evaluated the short-run IPOs' performance but they also revealed that, the performance of the IPOs also affect

the return of stock index (though in short-run). So, the stock index returns of different markets are also influenced by the IPOs introduced in their respective economy.

Gulia & Handa (2015) analysed the daily closing indices value of BRICS stock exchange in an attempt to examine the causal relationship between the returns of BRICS' countries stock exchanges and looking into the possibility of integration of Indian stock market with rest of the BRICS nation's stock exchanges during the period of study form June 1, 2009 to March 31, 2015. Statistical tests like, Augmented Dickey Fuller test had been used to test the stationarity of the data, pairwise Granger causality test was applied for examining the causal relationship between returns of BRICS' countries stock markets. It was found by them that, the return at indian stock exchange Granger cause the return at Russia, Brazil, and South Africa's stock exchanges. Neither the China stock returns are Granger caused by indian stock exchange, nor is the indian exchange is Granger caused by China's stock exchange. Their results of co-integration test inferred that, the stock exchanges of the BRICS countries are not co-integrated and they also conclude that, the presence of co-movements among national stock markets limits the benefit of international diversification. Nashier (2015) examined the integration among different stock markets of BRICS countries and the stock markets of U.S. and U.K. with the help of daily closing price of the major stock indices of these countries from the period 1st January 2004 to 31st December 2013 with the application of Johansen's co-integration test and correlation test. Her study found the evidences for both the short-term static and the long-term dynamic integration between these stock markets. Therefore, she identified that no gain can be derived by investors in developed stock markets from diversifying their investments across the BRICS markets or vice versa.

Singh & Shrivastav (2016) made an attempt to investigate the inter linkages and inter relationships between Sri Lanka and India's stock market. They tried to identify scope of integration between Sri-Lanka and India's stock market due to establishment of the long-term relations between both the countries. They applied ADF test for checking stationarity of data. Correlation between the indices of India and Sri Lanka is coming out to be +0.545507. Testing Results of Granger Causality test explained that return at Colombo exchange does not Granger cause return at Indian stock exchange and vice versa. Johansen Co-integration test also speaks about no co-integration between them. Therefore, even though good relationship exists between these nations still the stock market of both the nations are not integrated towards each other.

Maheshwari, Krishnamoorthy, Berry, & Stone (2003) stated that the relationship between stock returns and firms earnings has been a critical issue in accounting, finance, and economics literature. Modi (2000) concluded that management of financial flows includes framing and adoption of government policies, establishments of trade standards, transparency in commerce, corporate governance, etc. The administration of global financial flows includes control policies, procedural aspects of de facto control on commercial activities, national security, etc. Khan & Asif (2000) stated that, it is worth recapitulating that global investment trends reveal profound impact of WTO on the country's economic policy. India is a member of WTO committed to effect changes in the direction of global economy. Singh & Gupta (2013) concluded that the inclusion of Human Asset Valuation Information might benefit the investors and it would be of immense use if information relating to human asset is presented so that the investors can evaluate properly assets and income. Dhingra, Singh, & Magu (2014) found that a new form of reporting is evolving due to the limitations of current financial reporting, which should have information about ecological footprints of operations, economic, social, and environmental impact.

Objectives of Study

The paper talks about inter-linkages and relationship between indian and New York stock markets. The specific objectives of the study are as under:

Primary Objective

1. To analyze degree of interdependence and impact between American and Indian stock market.

Secondary Objective

1. To correlate the performance of New York stock exchange and Indian stock market.
2. Examining scope of integration between New York stock exchange and Indian stock market.

Research Design and Methodology

Data

This paper is an attempt to explore inter-linkages between New York stock exchange and Indian (NSE) market and tried to find the new dimensions of linkages and integration between these markets. Study has been conducted for 17 year period starting from January 1, 2000 to December 31, 2016 for evaluating existence of dynamic relationship. We have taken one stock exchange from both the countries. New York Stock Exchange (NYSE) has been taken for USA as the representative exchange. Since India has two leading stock exchanges National Stock Exchange (NSE) and Bombay Stock Exchange (BSE), therefore, we have opted only NSE (CNX Nifty Index) as the representative exchange of India.

The monthly closing stock index price has been taken starting from January have been 2000 to December 2016 considering as the reference period, in this way, the data of the 204 months gathered to testify existence of inter-linkages between NSE and NYSE. The data mainly collected from NYSE website and NSE website and websites of the various agencies of respective government and annual reports have also been consulted. Secondary data and other pertinent literature available on this subject had been compiled from published/unpublished materials, documents and internet sources through extensive desk work. The data analysis was done with E-Views 9.

Tools and Techniques

Descriptive statistics (mean, median, mode, standard deviation, skewness, kurtosis) used to summarise the general trend and pattern of the dataset. For checking data series stationarity, which is essential for enhancing reliability and accuracy of the model, we prepared the line graph of each series. Time series data is called stationary if the mean, variance, and auto-covariance are independent of time. We have used the log value of indices and further testified the nature of data series with the application of Augmented Dickey-Fuller (ADF) test under unit root hypothesis testing with below mentioned equation.

$$\Delta y_t = \alpha + \beta_t + \gamma y_{t-1} + \delta_1 \Delta y_{t-1} + \cdots + \delta_{p-1} \Delta y_{t-p+1} + \varepsilon_t$$

Where α is referred as constant, β as time trend coefficient and p being lag order of autoregressive process. Imposing constraints $\alpha=0$ and $\beta=0$ corresponds to random walk modeling and use of constraint $\beta=0$ corresponds to modeling the random walk with drift.

After ADF test, we applied Johansen Co-integration in indices of NYSE and NSE and estimated the correlation value and after finding it test of Granger causality was conducted on NSE and NYSE index return for capturing the degree and the direction of causation between India and America stock price indices under study and to further explore the short and the long-run interrelationships and integration between these stock markets.

Data Analysis and Interpretation

The data is statistically evaluated and interpreted in this section for indices of NYSE and NSE. Starting with descriptive statistics as shown in Table 1, the results obtained for the same depicts that NYSE index is negatively skewed which means tail of distribution is on left or distribution is having a long left tail and concentration of mass distribution is on rights similarly, in case of NSE index (India) is also negatively skewed which means tail of distribution is on left or distribution is having a long left tail and

the concentration of mass distribution is on the right. The kurtosis, in normal distribution series, has a value of 3. Since the kurtosis value of NSE and NYSE coming out to be more than 3, it infers that these return series are leptokurtic. The mean value of NSE return is 32.70739 whereas the mean value of NYSE is33.30391which mean Indian stock market produces little bit lesser returns than NYSE market.

Table No. 1: Descriptive Statistics

Particulars	**NSE**	**NYSE**
Mean	32.70739	33.30391
Median	29.50000	43.45000
Maximum	975.0000	971.7000
Minimum	-1035.600	-1036.450
Std. Dev.	277.9912	279.1563
Skewness	-0.344256	-0.357714
Kurtosis	5.412618	5.262856
Jarque-Bera	53.24328	47.64034
Probability	0.000000	0.000000
Sum	6639.600	6761.850
Sum Sq. Dev.	15610384	15741505
Observations	203	203

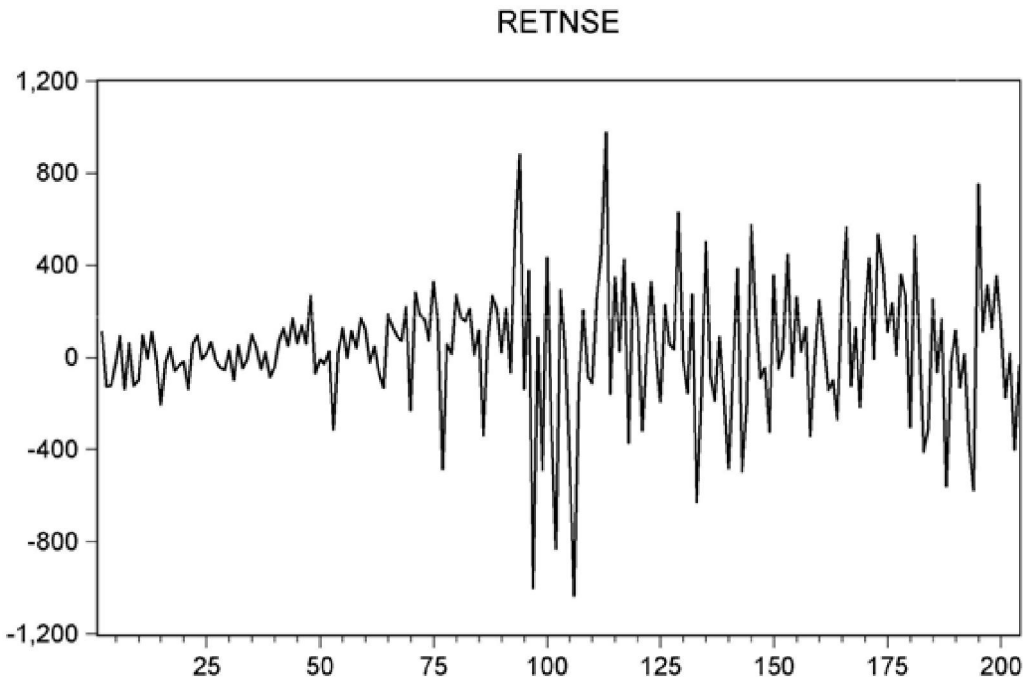

Figure No. 1: Line Graph of NSE Nifty Return

To capture the econometric results and its interpretation, two series representing the stock indices of America and India were statistically analysed in E-Views 9. Since it is essential to assure series under study is stationary, in econometric analysis, we have used the log value of indices. The series was tested and found that stationary at first difference. The line graphs are prepared for stationarity. Graph 1 and 2 demonstrate the line graph of Indian and American stock indices returns at first difference. Since it is always good to testify and reconfirm the results with other available tools for having more reliability in the data series, we applied ADF test on the indices of NYSE and NSE for unit root.

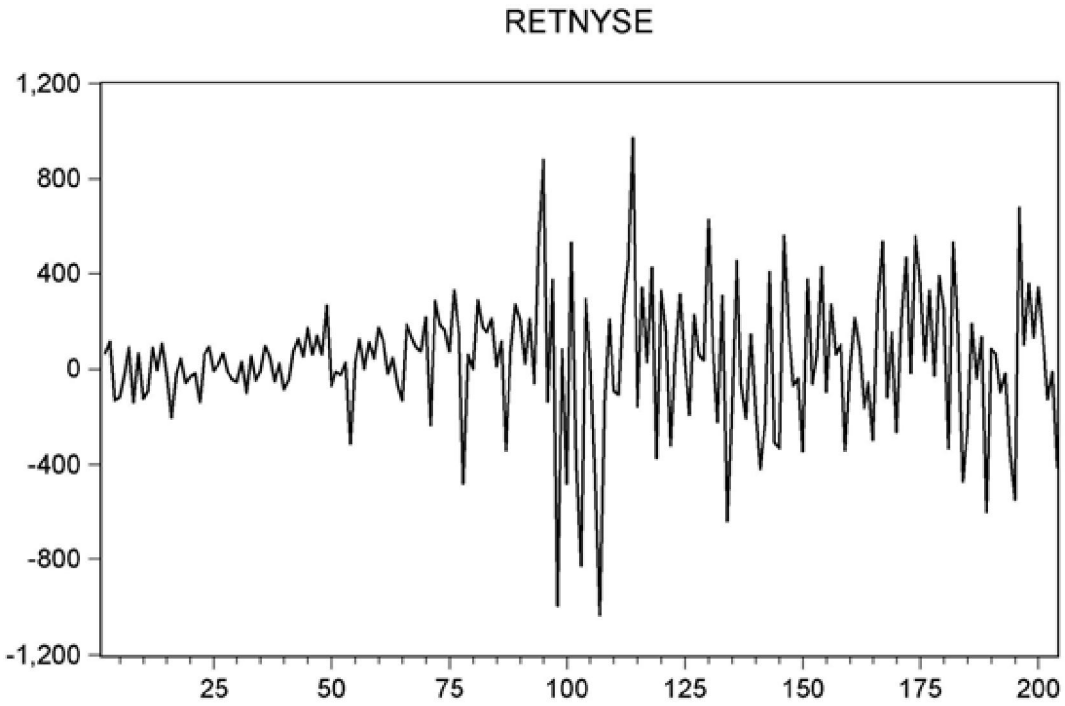

Figure No. 2: Line graph of NYSE

Table No. 2 and Table No. 3 represent result of unit root with Augmented Dickey-Fuller test. We tested the null hypothesis, data series has unit root, at 5% significance level and we found that, since the p-value was more than 0.05, therefore, making it non stationary, so it was tested again with first difference and was found stationary as the p-value was lesser than 0.05 with 2 lags. Moreover, the t-statistics was also found more than critical values, so we must reject null i.e., data has unit root at first difference, hence it makes data fit for further econometric testing.

We applied Ganger causality test between them, found probability value of hypothesis RETNYSE does not Granger Cause RETNSE less than 0.05 telling the rejection of null and infers that NYSE affect the return on NSE and RETNSE does not Granger Cause RETNYSE found more than 0.05 which infers null hypothesis is accepted and NSE does not affect NYSE.

We applied Johansen Co-Integration test, after Granger causality, for evaluating stock market co-integration between them. It is clear from the results that, since trace statistic is more than critical value and p-value is coming out to be less than 0.05, therefore, it is clear that there is a co-integrating relationship between stock market of India and USA.

Table No. 2: ADF Results for NSE Index

Augmented Dickey-Fuller test statistic			-14.47453	0.0000
Test critical values:	1% Level		-3.462737	
	5% Level		-2.875680	
	10% Level		-2.574385	
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOGIND(-1) -1.023207	0.070690	-14.47453	0.0000	
C	33.09892	19.78652	1.672802	0.0959
R-squared	0.511614	Mean dependent var.	-0.729802	
Adjusted E-squared	0.509172	S.D. dependent var.	398.5930	
S.E. of regression	279.2507	Akaike info criterion	14.11195	
Sum squared residual	15595191	Schwarz criterion	14.14470	
Log likelihood	-1423.307	Hannan-Quinn criter.	14.12520	
F-statistic	209.5121	Durbin-Watson stat	1.997315	
Prob.(F-statistic)	0.000000			

Table No. 3: ADF Results for NYSE

Null Hypothesis: D(LOGNYSE) has a unit root				
Exogenous: Constant Lag				
Length: 0 (Automatic - based on SIC, maxlag=14)				
Vaiables				
Std. Error	t-Statistic	Prob.*		
Augmented Dickey-Fuller test statistic		-14.56304	0.0000	
Test critical values: 1% Level		-3.462737		
	5% Level	-2.875680		
	10% Level	-2.574385		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOGIND(-1) -1.035579	0.071110	-14.56304	0.0000	
C	34.42048	19.88726	1.730780	0.0850
R-squared	0.514660	Mean dependent var.	-2.342574	
Adjusted E-squared	0.512233	S.D. dependent var.	401.4368	
S.E. of regression	280.3647	Akaike info criterion	14.11191	
Sum squared residual	15720878	Schwarz criterion	14.15267	
Log likelihood	-1424.111	Hannan-Quinn criter.	14.13316	
F-statistic	212.0820	Durbin-Watson stat	1.987938	
Prob.(F-statistic)	0.000000			

Table No. 4: Granger Causality Test Results

Null Hypothesis	Obs.	F-Statistics	Prob.	Causal Relationship
RETNSE does not Granger Cause RETNYSE	201	0.50562	0.6039	No
RETNYSE does not Granger Cause RETNSE		9938.74	1E-197	Yes

Table No. 5: Co-integration Results of NSE and NYSE

Trend assumption: Linear deterministic trend Series: LOGNSE LOGNYSE Lags interval (in first differences): 1 to 4 Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigen value	Trace Statistics	0.05 Critical Value	Prob.**
None* At most 1*	0.537130 0.124140	178.7660 26.24472	15.4971 3.841466	0.0001 0.0000
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values Unrestricted Co integration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigen value	Trace Statistics	0.05 Critical Value	Prob.**
None* At most 1*	0.537130 0.124140	152.5213 26.24472	14.26460 3.841466	0.0001 0.0000
Trace test indicates 2 co integrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values Unrestricted Co integrating Coefficients				
LOGNSE	**LOGNYSE**			
-0.158124 -0.004956	0.15747 0.013510			

Conclusions

The New York stock exchange (NYSE) and National Stock Exchange (NSE) are two fully automated exchanges of world and NYSE is on top in ranking of world stock exchange for market capitalization. India (NSE) is also ranked 12th in the global stock exchanges. Although, India and America are not neighboring countries but still have a good trade, economic, and political relationship from years. This paper shows results of investigation of financial interdependence between NSE and NYSE with stock index co-movement and with the use of various econometric tests.

We applied ADF test for checking usability of data series for econometric test and found data series non-stationary at level but stationary at first difference. Descriptive statistics showed that stock market of India provide lower returns in compare of New York stock market Correlation between the indices of New York and India is coming out to be -0.031607593 which depicts stock market of India is negatively correlated with the NYSE Market.

Testing results of Granger Causality explained that return at NYSE does Granger Cause return at Indian exchange that infers the returns on NSE is influenced more with NYSE index co-movements but not vice versa because NSE does not Granger Cause return at NYSE. Johansen Co-integration also speaks co-integration between them which means that movements in NYSE index influences NSE market and both having co-movements. Therefore, our concluding remark is that India and America has good relations, both countries enjoy a strategic position in their own geographical cluster. Even

historically both the nations are very close to each other. These commonness and good relationship is seen between these two countries and stock market of NSE and NYSE is found to be more financially co-integrated towards each other. Granger causality also speaks about causal relationship of NYSE and NSE and the results are also confirmed from Johansen Co-integration test in order to have a broader picture of relationship between them. So, we found a significant financial integration relationship between both the nations stock market.

Policy Implication of the Study

The study basically helps the portfolio investors to take the decision with respect to portfolio diversification. The study is also providing the basis for making government policy keeping in mind this financial integration between NSE and NYSE. Not only this, various market participants may use this study conclusion of this study in order to formulate different investment strategies especially keeping in mind the fluctuations happening in Indian and American market.

Limitations of the Study

Although we tried to capture the relationship between Indian and American stock market with the help of different statistical and econometric test but due to the large number of dataset we took the sample data for the period January 2000 to December 2016. A larger sample data could also be taken in the future for the purpose of having more detailed and more meaning analysis.

Although we have taken only one stock market index from both the countries i.e. NSE and NYSE but we know that there are many more stock exchanges in both the countries. So in future one more major stock exchange could also be taken for the same study like Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) from India and New York Stock Exchange (NYSE), National Association of Securities Dealers Automated Quotations (NASDAQ) or even Dow Jones.

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