

## **An Empirical Study on the Impact of Selected Asian Stock Market on the Nifty & Sensex**

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### **Abstract**

The involvement of people in the stock market has also increased in recent days. Thus, as a result, the volatility of the market has also increased. The profit-to-loss ratio on the stock market trade has also been on the lower side. The difficulties in the stock market have been unpredictable, thus upsetting the interests of the investors. This study compares the movement of the Indian stock markets (Sensex and Nifty) with six other major Asian stock markets (Japan, China, Hong Kong, Singapore, South Korea, and Taiwan) and tries to find the relationship between them. This study is done to check whether the movement of the major Asian stock markets is a predictor of the movement of the Indian stock markets. Statistical tools such as ordinary least squares, the Granger co-integration test, and a correlation matrix are used in this study to calculate the relationships. The result of this study will be helpful for stock market investors, particularly the short-term traders (intra-day traders) on the BSE and NSE.

**Keywords:** Volatility Spillover, Asian Market, Ordinary Least square, Granger Co-integration,

### **1.1 Introduction**

Investors are searching for higher rates of return in these economies due to low-interest rates in their own countries since the global financial crisis. This growing worldwide financial integration emphasises the need for understanding and forecasting the stock return relationship and volatility transmission among stock markets throughout the world. Investors are particularly interested in volatility transmission across international markets because they must constantly monitor and analyse changes in stock market linkages in order to reap the benefits of portfolio diversification and risk sharing Jung and Maderitsch, 2014; Kocaarslan et al., (2017). Moreover, Prasad, Rogoff, Wei, and Kose<sup>3</sup> claimed that stock market integration might hurt emerging countries by making them more sensitive to fluctuations in global financial markets. Many studies have been conducted to assess the possible cost of integrated marketplaces. Financial market integration indicates a lack of potential diversification opportunities. Furthermore, in interconnected markets, the movement of financial shocks from one market to another is significant. According to Srivastava, Bhatia, and Gupta, the massive and long-lasting impact of the 1997 Asian crisis and the 2007 subprime mortgage crisis and covid 2019 was most likely caused by increased stock market integration. The linking effects of national financial markets have grown more prominent in the setting of economic globalisation and financial integration. A country's financial markets may have to withstand price variations produced by shocks, which may be evaluated as spillover effects. As a result, analysing risk spillover effects between national financial markets is critical for the global economy's steady development. This paper analyses the dynamic volatility spillovers among the international stock markets.

### **1.2 Statement of Problem**

Presently, the fluctuations in the Indian market are attributed heavily to cross-border capital flows in the form of FDI and FII and to the Indian market's reaction to global market cues. Post the 1997 East Asian crisis, and Covid, which had caused a significant reduction in asset prices and stock markets in several Asian countries, these economies, boomed

back as a whole. Therefore, it is believed that the stock market movements of major Asian countries are significantly correlated. Many past studies have also revealed that a correlation exists between the Asian stock markets. However, these predictions are not always correct in practise. In most cases, only the opening of the Indian stock market is reflected by the other Asian markets. Later internal information, such as acquisition and takeover announcements, expansion plans, political news, and sector news, will influence the movement of the market. Short-term investors are the people who are being affected by these wrong predictions. India is a country where 80% of the investors are short-term investors; most of them are intraday traders. Hence, in order to preserve their interests, a study on the stock market integration and volatility spillover of the major Asian countries is found to be necessary.

### 1.3 Objectives

- To study the impact of the major Asian stock markets on the volatility of the Indian stock market.
- To capture the trends, similarities, patterns, and movements of the Indian stock market in comparison to its major Asian counterparts.
- To find out which Asian stock market has a major impact on the Indian stock market and which Asian stock market has the least impact on the Indian stock market.

### 1.4 Scope and Limitations of the Study

- The study is done on the secondary data information of various Asian Stock Exchange Indexes, such as the Nifty 50 (India), S&P BSE Sensex (India), Nikkie 225 (Japan), Shanghai SE Composite (China), Hang Seng (Hong Kong), Straits Times Index (Singapore), Kospi Index (South Korea), and TSEC Weighted Index (Taiwan).
- It does not involve other Asian stock markets like Pakistan, Malaysia, Indonesia, Thailand, Vietnam, Bangladesh, the Philippines, Sri Lanka, etc.
- It also does not involve European stock markets, American stock markets, or other global stock markets. The previous researcher focused on testing the relationship between the Indian stock market and other selected Asian markets. This research focused more on mean return and volatility as well as correlation and regression among the Asian stock markets.

## 2. Theoretical Framework:-

Some academics have previously focused their empirical investigations on the link between distinct stock market movements, which has been thoroughly investigated in both developing and mature capital markets. An increasing quantity of empirical data seen by numerous academics leads to the conclusion that stock market movements in different nations are reliant on each other at some point in time. Several past research efforts and articles, as well as their empirical results, that are relevant to the subject, are mentioned below. Numerous recent research, including ones by Lien et al. (2018), Hung (2019), and Vo and Tran (2020), have highlighted the impact of the 2008 GFC on international equity market linkages. The United States is China's largest export market, and China is also the United States' second-largest foreign creditor (Morrison, 2010; Vuong, Wu, et al., 2022). Because of events such as the Korean War, the Vietnam War, and, more recently, the Taiwanese and Hong Kong crises, the relationship between the United States and China is delicate and volatile. Nupur Gupta (2011) discovered the association of Indian stock returns with those of five other Asian nations in this research. The Indian markets have a very poor link with Hong Kong, Indonesia, Malaysia, and Japan. A larger connection was discovered between the Indian and Korean markets, which appeared to have decreased in the short run. As a result, international investors seeking to invest in the Asia Pacific area might profit from diversity in Indian markets. Indian markets also have the greatest compounded yearly growth rate in stock market returns, both short and long term. The stock returns of six Asian nations are examined in the second half of the research. Subha V (2010) and Thirupparkadal Nambi (2010) investigated the co-integration of Indian stock markets with US markets using the Engle Granger test of co-integration. This study concentrated on the Indian equities market's reliance on developed markets such as the American stock markets. The BSE and the top American stock markets' stock index values (closing prices) are acquired, and the Engle Granger test of co-integration is employed to analyse the interdependence of these stock markets. Interdependence/dependence was studied from January 1st, 2000 to December 31st, 2008. Throughout the study period, the test findings reveal that the Indian Stock Market has no dependency on the NASDAQ and the S&P 500, demonstrating the absence of co-integration between the Indian and American markets. The empirical data given in this research, according to Vedat Akgiray (1989), demonstrates that time series of daily stock returns display a substantial level of reliance. This study, conducted by Janak Raj and Sarat Dhal, looked into the nature of India's stock market's financial integration with global and key regional markets. The empirical research gives multiple applied finance views on stock market co-integration, testing the sensitivity of results to sample periods in a structurally changing environment,

the currency denomination of stock prices, and the frequency of daily and weekly data. Empirical data supports India's stock market's international integration in terms of stock values assessed in US dollars but not in local currency, a conclusion attributed to foreign investors' investment decisions. Back K (2010) examined the impact of capital assets pricing model on valuation. This paper also highlighted the correlation between risk and return. According to Debjiban Mukherjee (2007), the study discovered that markets have indeed begun to integrate, and the Indian market is no exception, especially after 2002-03, regulatory authorities must remove any ambiguity that may exist when compared to the regulations of other exchanges before they can actually make the grade; although it must be accepted that the market is evolving, the Indian system has already attained the minimum level of robustness and efficiency to make the grade; About the presence of any signals or patterns across stock exchanges, it is acceptable to say that the markets do react to global cues and any occurrences. The study, led by Giorgio De Dantis and Selahattin Imrohoroglu, discovered that, comparable to the data for most developed financial markets, volatility clustering appears to define developing markets. This article, by Thomas C. Chiang and Shuh-Chyi Doong, studied the link between market stock returns and volatility using seven Asian stock market indexes. Using the technique given by French et al. (1987), the study discovered a substantial association between stock returns and unexpected volatility in four of the seven Asian stock markets. In general, unanticipated volatility has a greater impact on stock returns than predicted volatility. According to Julia Leung (2014), the availability of dollar liquidity by the US Federal Reserve is the most crucial stabilising influence in times of crisis. It requests that the permanent arrangement under which the Fed has given currency exchange lines to five major central banks be expanded to include other global markets. How that can be accomplished in Asia, and if it can be accomplished through CMIM, should be urgently discussed. Meanwhile, CMIM should continue to institutionalise in order to increase its surveillance capability and readiness for liquidity supply. Longer term, a multipolar global monetary system should be established, and the supply of secure assets, particularly those denominated in RMB, should be promoted. According to Khositkulporn (2013), the summary statistics using both techniques revealed that the RSET was favourably connected to the RBSI, ROIL, and RSP500. Lin, V. S., Yang, Y., & Li, G. (2019) explained the economic drive in the tourism industry. The same economic drive plays important role in the stock market movements. The estimation findings of Heng Chen, Bento J. Lobo, and Wing-Keung Wong (2005) confirm that there is fractional cointegration or long-run equilibrium between three pairings of stock markets, namely India-US, China-US, and India-China. According to Fabian Lipinsky and Li Lian Ong (2014), the study's findings are consistent with the current research on Asian stock market pricing. In overall, stock returns in the area have been greater than those in the G-7, but they have also been more volatile. When it comes to Asian stock prices, international systemic risk factors and local fundamentals, such as predicted company earnings, have far less explanatory power than the G-7 markets. The findings suggest that the region has more unique impacts. According to Shen et al. (2022), the trade war between China and the United States has had a substantial influence on China's stock market. Furthermore, it was stressed that government actions are likely to have an impact on the open market as well as the integration of equities markets. Hence, government measures on both sides are projected to have a substantial impact on the degree of integration between the Chinese and US stock markets. This tragedy reached its peak in the United States in early 2020. (Corbet et al., 2021). One of the most devastating stock market disasters in financial market history occurred in March 2020. (Mazur et al., 2021). Many stock indices fell to their lowest levels at the conclusion of the first quarter of 2020. The COVID-19 disaster has had a significant influence on the international financial market. Sun et al. (2021) shown that during the COVID-19 tragedy, securities investors acted irrationally. Furthermore, during the COVID-19 epidemic, Liu et al. (2021) shown that fear and anxiety promote negative views about financial market investing decisions. These factors compel us to investigate if the COVID-19 tragedy affected stock investors in the US and Chinese stock markets in March 2020. According to Shaikh and Huynh (2021), the fear of securities investors during the catastrophe looks to be greater than during the previous two crises (the stock market crash of 1987 and the 2008 GFC). As a result, we anticipate that the COVID-19 tragedy will dramatically boost volatility transmission from Chinese to US equities markets. Trade liberalisation, according to Baele (2005) and Akhtaruzzaman, Boubaker, and Sensoy (2021), promotes integration and has an impact on stock market interdependence. Since volatility in one market or sector is likely to impact others, identifying spillover effects is critical for understanding the risk transmission pathway. (Shen and colleagues, 2022). Eboreime, E., Ohinmaa, A., Rusak, B., Cassidy, K. L., Morrison, J., McGrath, P. & Agyapong, V. I. (2022). Park S (2021) explained the correlation coefficient importance to test the covid 10 and travel behaviour. This paper explained the covid recession in tourism industry. Based on the above literature the following model has been proposed.

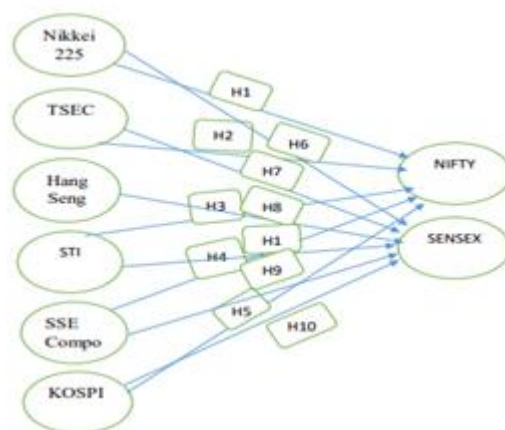


Figure: 1 Proposed Research Model

### 3. RESEARCH METHODOLOGY

#### 3.1. Research Design

This research is descriptive in nature. Using the Ordinary Least Square model, the Granger co-integration test, and the Correlation matrix, the descriptive technique is used to analyse the interdependence of the seven main Asian stock markets: India, Japan, China, Hong Kong, Singapore, South Korea, and Taiwan. The data utilised for analysis is secondary data taken from the websites of the individual stock exchanges. Purposive Sampling was utilised as the sample approach in this study. Secondary data is employed. The daily results of seven major Asian stock markets for the last five years (2018-2022) have been retrieved from their respective websites. The technique of purposeful sampling is applied. The top seven Asian stock exchanges have been chosen. There are seven people in the sample.

#### 3.2 Statistical Tools Used

##### 3.2.1. Ordinary Least Squares Test

Ordinary Least Squares (OLS) regression (or simply "regression") is a useful tool for examining the relationship between two or more interval/ratio variables. OLS regression assumes that there is a linear relationship between the two variables. If the relationship is not linear, OLS regression may not be the ideal tool for the analysis, or modifications to the variables/analysis may be required. The basic idea of linear regression is that, if there is a linear relationship between two variables, you can then use one variable to predict values on the other variable. For example, because there is a linear relationship between height and weight, if you know someone's height, you can better estimate their weight. Using a basic line formula, you can calculate predicted values of your dependent variable using your independent variable, allowing you to make better predictions.

##### 3.2.2. Co-integration Test

Co-integration is an analytical approach used to detect common patterns in multivariate time series and to simulate long-run and short-run dynamics. When two or more predictive variables in a time-series model have a similar stochastic drift, they are co-integrated. If a linear combination of variables yields a stationary time series, they are termed co-integrated.

The Engel-Granger approach searches for and calculates the parameters of individual co-integrating connections. Johansen techniques examine various co-integrating connections and estimate parameters in vector error-correction (VEC) models.

Engle and Granger pioneered modern ways to co-integration testing. Their procedure is straightforward: regress the first component  $y_{1t}$  of  $y_t$  on the remaining components of  $y_t$  and test the residuals for a unit root. If the residual test fails to discover evidence against the null hypothesis of a unit root, the Engle-Granger test fails to find evidence that the estimated regression relation is co-integrating.

The Engle-Granger technique is complicated by the fact that the residual series is estimated rather than observed, thus the typical asymptotic distributions of traditional unit root statistics do not apply. The augmented Dickey-Fuller and Phillips-

Perron tests (adftest and pptest) cannot be used directly. For appropriate testing, test statistics distributions must be generated particularly for the Engle-Granger test.

### 3.2.3. Correlation Matrix

A Correlation matrix describes correlation among M variables. It is a square symmetrical MxM matrix with the (i)th element equal to the correlation coefficient  $r_{ij}$  between the (i)th and the (j)th variable. The diagonal elements (correlations of variables with themselves) are always equal to 1.00.

## 4. ANALYSIS AND INTERPRETATION

TABLE: 1. OLS model for Nifty vs. Major Asian Markets from 2018 to 2022

Dependent variable: Nifty

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	0.417327	0.427564	0.9761	0.3292	
Nikkei225	0.391417	0.0131704	29.7195	<0.0001	***
SSEComposite	0.110328	0.0121556	9.0764	<0.0001	***
HangSeng	0.187691	0.063195	2.9700	0.0030	***
STI	0.156959	0.0639209	2.4555	0.0142	**
Kospi	-0.479273	0.078606	-6.0972	<0.0001	***
TSECWeighted	0.472046	0.0471597	10.0095	<0.0001	***

Mean dependent var	8.747294		S.D. dependent var	0.189106
Sum squared resid	6.583225		S.E. of regression	0.073945
R-squared	0.847860		Adjusted R-squared	0.847102
F(6, 1204)	1118.294		P-value(F)	0.000000
Log-likelihood	1439.152		Akaike criterion	-2864.305
Schwarz criterion	-2828.610		Hannan-Quinn	-2850.865
rho	0.982779		Durbin-Watson	0.035126

The null hypothesis is rejected since the p-value is less than 0.05, and the alternative hypothesis is accepted. Except for STI, there is a considerable association between Nifty and major Asian markets with a 5% degree of confidence. With a 10% degree of trust, STI has no meaningful association with Nifty as a complete Asian market. The mean value of the Indian National Stock Exchange and other Asian stock markets is 8.74 from 2018 to 2022. The correlation coefficient between the Asian stock market and the NSE is 0.847860. The overall P value is 0.0000, which is less than a 5 percent level of significance between the NSE and other Asian stock markets.

TABLE: 2. Co-integration model for Sensex vs. Major Asian Markets from 2018 to 2022

Dependent variable: Sensex

	Coefficient	std. error	t-ratio	p-value
const	1.82544	0.404577	4.512	7.05e-06 ***
Nikkei225	0.39031	0.0124623	31.32	5.40e-158 ***
SSEComposite	0.0787786	0.0115021	6.849	1.18e-011 ***
HangSeng	0.169268	0.0597974	2.831	0.0047 ***
STI	0.00541407	0.0604843	0.08951	0.9287
Kospi	-0.517299	0.0743799	-6.955	5.78e-012 ***
TSECWeighted	0.665414	0.0446242	14.91	2.86e-046 ***

Mean dependent var	9.950750	S.D. dependent var	0.189734
Sum squared resid	5.894386	S.E. of regression	0.069969
R-squared	0.864680	Adjusted R-squared	0.864005

Log-likelihood	1506.075	Akaike criterion	-2998.150
Schwarz criterion	-2962.455	Hannan-Quinn	-2984.710
rho	0.978214	Durbin-Watson	0.043459

Since the p-value is less than 0.05, null hypothesis is eliminated and alternate hypothesis is accepted. It is observed that the movement of Sensex depends on the movement of Major Asian Markets with a 5% level of confidence. As a whole Asian market, there is no dependency on STI for Sensex. As per the Granger model the relationship between NSE and other Asian Market is 9.950750 from 2018 to 2022. The correlation between other Asian Market and NSE is 0.864680. The regression value between other Asian stock market and NSE is 0.864005. The risk level in between the NSE and other Asian stock market is 0.1897 which is below the average risk level.

TABLE: 3. Co-integration model for Nifty vs. Major Asian Markets from 2018 to 2022

Dependent variable: Nifty

	Coefficient	std. error	t-ratio	p-value
const	0.417327	0.427564	0.9761	0.3292
Nikkei225	0.391417	0.0131704	29.72	5.02e-146 ***
SSEComposite	0.110328	0.0121556	9.076	4.47e-019 ***
HangSeng	0.187691	0.0631950	2.970	0.0030 ***
STI	0.156959	0.0639209	2.456	0.0142 **
Kospi	-0.479273	0.0786060	-6.097	1.45e-09 ***
TSECWeighted	0.472046	0.0471597	10.01	1.04e-022 ***

Mean dependent var	8.747294	S.D. dependent var	0.189106
Sum squared resid	6.583225	S.E. of regression	0.073945
R-squared	0.847860	Adjusted R-squared	0.847102
Log-likelihood	1439.152	Akaike criterion	-2864.305
Schwarz criterion	-2828.610	Hannan-Quinn	-2850.865
rho	0.982779	Durbin-Watson	0.035126

Since the p-value is less than 0.05, null hypothesis is eliminated and alternate hypothesis is accepted. It is observed that the movement of Nifty depends on the movement of Major Asian Markets with a 5% level of confidence. As a completely Asian market, there is no dependency on STI for Nifty with a 10% level of confidence. As per the Co integration test, the mean vale of NSE and other Asian stock market is 9.747294. The correlation between NSE and other Asian stock market is 0.847860. The regression between NSE and other Asian stock market is 0.847102. The risk level of NSE and other Asian stock Market is 0.189106.

TABLE: 4. Correlation Matrix for Sensex and other Asian Markets from 2018 to 2022

5% critical value (two-tailed) = 0.0563 for n = 1211

Sensex	Nikkei225	SSEComposite	HangSeng	STI	
1.0000	0.9043	0.4652	0.7510	0.6295	Sensex
	1.0000	0.4179	0.7387	0.6368	Nikkei225
		1.0000	0.3997	0.1052	SSEComposite
			1.0000	0.8117	HangSeng
				1.0000	STI
			Kospi	TSECWeighted	
			0.3813	0.7918	Sensex
			0.3326	0.7326	Nikkei225
			0.3197	0.3920	SSEComposite
			0.6836	0.8193	HangSeng
			0.4441	0.6735	STI

			1.0000	0.6659	Kospi
				1.0000	TSECWeighted

As per the correlation matrix the Japanese stock market and Sensex has a strong positive relationship. The correlation value is 0.9043. The Sensex and SSE Composite has less impact. The Correlation matrix value is 0.4652. The Japanese stock exchange of Nikkei225 and HangSeng stock exchange has highly positive relationship. The correlation value is 0.7387. The Nikkei225 and Kospi has less impact. The correlation value is 0.4179. The SSE Composite and Hangsen has reasonable relationship and SSE Composite and STI has very less impact. The HangSeng, TSEC, and STI has strong positive relationship. The correlation values are 0.8193 and 0.8117. The STI and TSEC has strong positive relationship. The Kospi and HangSeng has positive relationship. The correlation value is 0.6836. The overall relationship between Sensex and Other stock exchanges in Asia has strong relationship.

TABLE: 5. Correlation Matrix for Nifty and other Asian Markets from 2018 to 2022

5% critical value (two-tailed) = 0.0563 for n = 1211

Nifty	Nikkei225	SSEComposite	HangSeng	STI	
1.0000	0.8983	0.4788	0.7499	0.6368	Nifty
	1.0000	0.4179	0.7387	0.6368	Nikkei225
		1.0000	0.3997	0.1052	SSEComposite
			1.0000	0.8117	HangSeng
				1.0000	STI
			Kospi	TSECWeighted	
			0.3706	0.7645	Nifty
			0.3326	0.7326	Nikkei225
			0.3197	0.3920	SSEComposite
			0.6836	0.8193	HangSeng
			0.4441	0.6735	STI
			1.0000	0.6659	Kospi
				1.0000	TSECWeighted

As per the correlation matrix, the Nifty and Japan's Nikkei 225 have a strong positive correlation. The correlation value is 0.8983. The Nifty has normal impact with SSEComposite. The Nifty has a strong relationship with Hang Seng. The correlation value is 0.7499, and the Nifty has an equal relationship with TSEC. The correlation value is 0.7645. The Nifty has a more distant relationship with the Kospi. The correlation value is 0.3706. The Nikkei 225 has a strong relationship with Hang Seng. The correlation value is 0.7387. The SSE Composite has average impact with Hang Seng. The STI has a strong correlation with Hang Seng. The correlation value is 0.8117. The Kospi has a strong positive relationship with Hangzhou. The correlation value is 0.6836. The TSEC has a strong relationship with HangSeng. The correlation value is 0.8193.

## 5. FINDINGS AND RECOMMENDATIONS

The stock index movements of seven leading Asian countries were analysed using ordinary least squares, Granger co-integration, and a correlation matrix, and the following were observed:

- All the six major Asian stock markets taken together, viz., Japan, China, Hong Kong, Singapore, South Korea, and Taiwan, showed a significant relationship at a 5% level of confidence with the Sensex and the Nifty when compared individually. However, when Sensex is compared to the Asian market as a whole, the Straits Times Index (STI) in Singapore shows no significant relationship with it. When Nifty is compared to the Asian market as a whole, the Straits Times Index (STI), Singapore shows no significant relationship with it at a 10% level of confidence. Therefore, the investors can predict the Indian stock market movement with the help of Asian market opening. This will help short-term investors know about the trend of the Indian stock market.
- Sensex has a 5% level of dependency on all six major Asian stock markets individually, whereas when tested with the Asian stock market as a whole, Sensex has no dependency on the Straits Times Index (STI), Singapore.

Nifty has a dependency on all six major Asian stock markets individually at a 5% level of confidence, whereas when tested with the Asian stock market as a whole, Nifty has no dependency on the Straits Times Index (STI), Singapore, at a 10% level of confidence. It clearly shows that the Sensex is strongly influenced by the other Asian stock markets. Investors who are trading in the Indian stock market can use the movement of other Asian markets as an indicator for making predictions. This will also help F&O traders to know about the index movement.

- All six major Asian stock markets have a positive correlation with Sensex movements, with the Nikkei 225 (Japan) having a near-perfect positive correlation with the value of 0.9043, followed by TSEC Weighted (Taiwan) and Hang Seng (Hong Kong) with '0.7918' and '0.7510, respectively, whereas the Kospi (South Korea) has the least positive correlation with Sensex with the correlation value of 0.3813, followed by SSE Composite (China) and STI (Singapore) with 0.4652 and 0.6295 with 0.90. According to the analysis, movements in the Japanese and Taiwanese stock markets have a direct influence on the Indian stock market. The influence of the Chinese stock market on the Indian stock market is less. In comparison to the Chinese stock market, the Indian stock market had a strong association with Japan and Taiwan.
- Nikkei 225 (Japan) has a near-perfect positive correlation with the value of 0.8983, followed by TSEC Weighted (Taiwan) and Hang Seng (Hong Kong) with 0.7645 and 0.7499, respectively, whereas Kospi (South Korea) has the least positive correlation with Nifty with the correlation value of 0.3706, followed by SSE Composite (China) and STI (Singapore) with 0.4788 and 0, respectively. This test also very clearly showed that the Asian market influenced the Indian stock market other than China and Singapore. The research will help the investors gain a better understanding of the relationship among the stocks. Stock market prediction is not an easy task. The investors have different analyses to know about the stock market movement, but the market moves not only based on domestic and its own financial position. International information also played a very vital role in the stock market movement. This research will help all types of investors learn about the stock market.

#### Recommendations

- The movement of the Asian stock market can be used as a predictor of the movement of the Indian stock market since there is a fair relationship between them.
- Prediction of the opening of the stock market has been a great challenge for stock traders in India. It is advisable to watch the movement of the major Asian stock markets before the opening of the Indian stock market in order to predict the opening to some extent.
- The following priorities can be taken into account while following the Asian stock markets' movements to predict the Indian stock market's movement.

Rank	Stock Market
1	Japan (Nikkei 225)
2	Taiwan (TSEC Weighted)
3	Hong Kong (Hang Seng)
4	Singapore (Straits Times Index)
5	China (SSE Composite)
6	South Korea (Kospi)

#### 6. CONCLUSION

The leading seven stock markets of Asia were taken and analysed by using Ordinary Least Squares, Granger co-integration and Correlation matrix. The results proved that all the seven Asian stock markets taken have a strong inter-relationship among them. When compared to other major Asian stock markets Singapore stock market don't have much impact on Indian stock market. It is found that none of the Asian stock markets has negative correlation among themselves. It is also observed that Japan stock market has the strongest relationship with the Indian stock market among other Asian stock markets. Depending completely on the Asian stock market movement is not advisable. Other macroeconomic factors like Industry Performance, Industry News, Industry Production, Foreign Institutional Investors, Balance of Payment, Oil Price, Inflation, Exchange rate, Gold Price, GDP, Government change, Government Policies, etc., will also influence the stock market movements. However, Asian stock markets' movements are still an important predictor of Indian stock market movement.

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