

# Relationship between Indian and Chinese Stock Markets: An Empirical Analysis

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Financial markets across the globe are transforming at a fast pace. Globalization has proved as the biggest reform till date which affects all the economies across globe. Markets have become more integrated in this globalize era and effects of one financial market operations and fundamentals on other have increased. The increased availability of GDRs and ADRs makes it easier for investors to trade international stocks in their own currency and through their normal settlement and clearance institutional. Now, a large number of countries such as Singapore have also introduced "Singapore depository receipt" and India has also brought its "Indian depository receipts" in the year 2008. It is very difficult to access the interdependence of stock markets. Several authors and scholars studied the impact of one stock market on another. Several investment bankers and speculators daily predict the stock market movements of one economy on the basis of stock market movements of another economy. This paper is an attempt to find out the potential for diversification in China and Indian Stock Market by studying correlations in the index returns. The secondary objective of the research is to measure and analyze compounded growth of Indian and China Stock Market.

**KEYWORDS:** -Financial Markets, Globalization, Currency, Speculators, Investment Bankers, Diversification, Interdependence, Volatility.

## INTRODUCTION

Every action leads to reaction. In a globalize era action of one economy has an impact on the financial market of other economy. The markets for goods and services have become increasingly internationalized through the various trade production measures initiated by most countries, migration of labour and the Trans location of production and distribution operations in the other countries. Similarly, the markets for common stocks have become increasingly internationalized. Institutional and individual investors have started resorting to diversification of their investments in stocks of other countries to enhance returns. The increased availability of GDRs and ADRs has made it easier for investors to trade international stocks in their own time and in their own currency and through their normal settlement and clearance institutions. International stocks are usually segmented into stocks of developed and emerging countries. Among the developed countries, the United States, Japan and the United Kingdom have the largest market capitalizations. Among the emerging economies, Taiwan, China and Brazil have the largest market capitalization The prices of stocks on markets around

the world do not move together synchronously because the economic systems in which those markets are located have dissimilar environments in terms of taxation, Industrial growth, Political stability, Monetary Policy and other factors. Low levels of co-movement of stock prices offer investors the benefit of diversifying their holdings across the markets of countries. That is, investors who allocate some of their portfolio to share from other countries can increase the portfolio's expected return with no increase in risk. This benefit of international diversification has led many investors to allocate some of their wealth to foreign markets and shares of foreign firms.

## STOCK MARKET REFORMS IN INDIA

With the objectives of improving market efficiency, increasing transparency, preventing unfair practices and bringing the Indian capital market up to international standards, SEBI was established by enacting SEBI Act, 1992. It created regulator responsibilities for: (a) protecting the interest of investors in securities, (b) promoting the development of the securities market, and (c) regulating the securities market. Its regulatory jurisdiction extends

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over corporate in the assurance of capital and transfer of securities in addition to all intermediaries are registered and regulated by SEBI. They also required appointing compliance officer who is responsible for monitoring compliance with securities laws and for redressal of investor grievances.

### **Electronic Trading (1994)**

The open outcry trading on stock exchanges in India was time consuming and inefficient. This imposed limits on trading volumes and efficiency. The trading on stock exchanges in India used to take place through open outcry without use of information technology for immediate matching or recording of trades. This was time consuming and inefficient. This imposed limits on trading volumes and efficiency. In order to provide efficiency, liquidity and transparency, NSE introduced a nation-wide on-line fully automated screen based trading system (SBTS), where a member can punch into the computer quantities of securities and the prices at which he likes to transact and the transaction is executed as soon as it finds a matching sale or buy order from a counter party. SBTS electronically matches orders on a strict price/time priority and hence cuts down on time, cost and risk of error, as well as on fraud resulting in improved operational efficiency. In order to provide efficiency, liquidity and transparency, NSE introduced a nationwide on line fully automated Screen Based Trading System (SBTS) where a member can punch into the computer the quantities of securities and the prices at which he like to transact and the transaction is executed as soon as it finds a matching sale or buy order from a counter party. SBTS electronically matches order on a strict price/time priority and hence cuts down on time, caused and risk of error, as well as on fraud resulting in improved operational efficiency. It allows faster incorporation of price sensitive information into prevailing prices, thus increasing the informational efficiency of the markets. It enables market participants to see the full market on real time, making the market transparent. In the very first year of operation, NSE became the leading stock exchange in the country, impacting the fortune of other exchanges and forcing them to adopt SBTS also. As result, all exchanges in India switched from floor trading to anonymous electronic trading.

### **Reduction in trading cycle**

Under the carry forward system, the trades were accumulated over the trading cycle and at the end of the cycle, this are clubbed together, and positions were netted out and payment of cash and delivery of securities settled the balance. Initially, the trading cycle varied from 14 days for specified securities to 30 days for others and settlement took another fortnight. The exchanges, however, continued to have different weekly trading cycles, which enabled shifting of positions from one exchange to another. Rolling settlement on T+5 basis was introduced in respect of specified scrips reducing the trading cycle to one day. It was made mandatory for all exchanges to follow a uniform weekly trading cycle in respect of scrips not under rolling settlement. The settlement period has been reduced progressively from T+5 to T+3 days. Currently T+2 day settlement cycle is being followed.

Trading in Retail Debt Market is permitted under Rolling Settlement, where in each trading day is considered as a trading period and trades executed during the day are settled based on the net obligations for the day. Settlement is on a T+2 bases i.e. on the 2nd working day. For arriving at the settlement day all intervening holidays, which include bank holidays, NSE holidays, Saturdays and Sundays are excluded. Typically trades taking place on Monday are settled on Wednesday, Tuesday's trades settled on Thursday and so on.

### **Derivatives Trading**

In order to assist market participants to manage risks better to hedging, speculation and arbitrage, Securities Contract (Regulation) Act was amended in 1995 to lift the ban on option in securities. However, trading in derivative did not take off, as there was no suitable legal and regulatory framework to govern these trades. Decides, it needed a lot of preparatory work- the underlying cash markets strengthened with the assistance of the automation of trading and of the settlement system; the exchanges developed adequate infrastructure and the information system required to implement trading discipline in derivative instrument. The act was amended further in December 1999 to expand the definition of securities to include derivatives so that the whole regulatory framework

governing trading of securities could apply to trading of derivatives also.

The derivatives trading on the NSE commenced with S&P CNX Nifty Index futures. The trading in index options commenced on June 4, 2001 and trading in options on individual securities commenced on July 2, 2001. Today, both in terms of volume and turnover, NSE is the largest derivatives exchange in India. Currently, the derivatives contracts have a maximum of 3-month expiration cycles. Three contracts are available for trading, with 1 month, 2 months and 3 months expiry. A new contract is introduced on the next trading day following the expiry of the near month contract.

### MARKET PERFORMANCE OF CHINA

The total turnover on the SSE was RMB 7,692.732 billion, 7.22% lower than the previous year, of which trading of stocks accounted for RMB 2,647.060 billion, or 34.41% of the total turnover. Total funds' trading was RMB 24.91 billion. Daily average trading of stocks was RMB 1.0893 billion, 26.06% higher than the previous year; daily bonds trading was RMB 19.540 billion, down 23.54% from the previous year; daily fund trading was 103 million RMB, 31.33% lower than the previous year. The SSE 50 index opened at 997 and closed at 842.73, shedding 15.47% at the end of the year, with peak at 1141.99 and lowest at 833.09. Throughout the year, the SSE 50 index had a fluctuation of 37.08%. The SSE 180 index opened at 2820.24 at the beginning of the year and closed at 2362.7, down 16.25%, with its peak at 3278.82 and lowest at 2321.86, fluctuating within a band of 41.22%. The SSE composite index opened at 1492.72 and closed at 1266.5 with the peak at 1783.01 and lowest at 1259.43, fluctuating within a band 41.57%. The B Shares index opened at 104.87 and closed at 75.65, with the peak at 122.94 and lowest at 75.46.

Four-year market slump which saw Shanghai's market value halved (after reaching a peak in 2001). A ban on new IPOs was put to curb the slump and allow more than US\$200 billion of mostly state-owned equity to be converted to tradable shares. In 2007, "stock market frenzy" as speculative traders rushes into the market, making China's stock exchange temporarily the world's second largest in terms of turnover. Fears of a

market bubble and intervention by authorities caused large fluctuation not seen since the past decade.

After reaching an all-time high of 6,124.044 points, the benchmark Shanghai Composite Index ended down a record 65% due mainly to the impact of the global economic crisis which started in mid-2008. As of February 2008, 861 companies were listed on the SSE and the total market capitalization of SSE reached RMB 23,340.9 billion (US\$3,241.8 billion; US\$1 = RMB 6.82).

### LITERATURE REVIEW

According to various researchers, there is both a theoretical and empirical debate among the researchers to address the question of the relation between stock returns of different emerging markets. Researchers have employed a wide variety of subtle ways to examine the interlink between Indian stock market and foreign stock markets.

Solnik (1987) employing regression analysis on monthly data for eight industrialized countries from 1979-83 found a weak but positive relation between real domestic stock returns and real exchange rate movements.

Taylor, M.P (1988) studied the impact of the abolition of UK exchange control on the degree of integration of UK and overseas stock market such as West Germany Netherlands, Japan and US by employing the Grangers Causality and Engel Granger Co integration test over the two sub periods spanning from April 1973 to Sept. 1979 and Oct.1979 to June 1986 respectively, the study concluded, there has not been any significant increase in the correlation of stock market returns as a result of the abolition of exchange control.

Ajay and Mougoue (1996) made an attempt to examine the intertemporal relation between stock indices and exchange rate for a sample of eight advanced countries during the period 1985 to 1991. By applying co integration and causality test on daily closing stock market indices and exchange rate, the study found (i) an increase in aggregate domestic stock price has a negative short run effect on domestic currency values, (ii) sustained increase in domestic stock price will induce domestic currency appreciation in the long run

(iii) currency depreciation has negative short run and long run effects on the stock market.

**OBJECTIVES OF THE STUDY**

The present study seeks to make a comparative analysis between China and Indian Stock Market and it is being conducted to examine the co variability of returns in these markets. This study is of descriptive nature. For the purpose of the study, data will be collected from secondary sources. The present study envisages primarily the following research objectives:

- ◆ To bring out the potential for diversification in India and China by studying correlations in the index returns
- ◆ To measure and analyze compounded growth of Indian Stock market and China Stock Market

**Hypotheses**

**H0:** There is no significant degree of correlation in Indian and Chinese Stock Markets

**RESEARCH METHODOLOGY**

The political and economic scene across the globe witnessed marked changes during this period. This period is sufficient to examine the co variability because this period covers all the major events, such as recession, boom, political turmoil, coalition government, full convertibility of currency, passing of right to information Act, etc.

**Sample Size**

The study is based on the Indian and China markets. Seven year weekly data of 2 Stock Markets have been used for the research.

**Table 1-1**

S.No.	Country	Index
1.	India	BSE 30
2	China	SSE COMPOSITE

**Source of Data**

Data is collected from the web sites of indexes and other related sites are also used for the collection of the data. The names of websites are as follows:

- ◆ [www.nasdaq.net](http://www.nasdaq.net)

- ◆ [www.bseindia.com](http://www.bseindia.com)
- ◆ [www.nseindia.com](http://www.nseindia.com)
- ◆ [www.finance.yahoo.com](http://www.finance.yahoo.com)
- ◆ [www.infomine.com](http://www.infomine.com)

**DATA ANALYSIS**

For the analysis of the data, different methods such as bivariate correlation, average mean and regression analysis have been used as major tools. Correlation is the statistical tool used to measure the degree of relationship between different variables. When the values of one variable are associated with or influenced by other variable. As the study is aimed at finding relationship between Indian and China Stock Markets, therefore bivariate correlation is used to analyze the extent to which each country’s stock market is related with another.

Table 1-2 reveals that there is modest level correlation between China and India at 0.01 level of significance.

**Correlations Table 1-2**

		China
India	Pearson Correlation	.770(**)
	Sig. (2-tailed)	0.01
	N	314
		India
China	Pearson Correlation	.663(**)
	Sig. (2-tailed)	0.01
	N	314

\*\* Correlation is significant at the 0.01 level (2-tailed).

**Descriptive Statistics Table 1-3**

Countries	N	Minimum	Maximum	Mean
<b>India</b>	314	2875.53	20686.89	7894.4928
<b>China</b>	314	1013.64	5903.26	1928.4973

**Index Growth**

During the last few years or a decade, stock markets of a large number of economies have undergone drastic changes. These changes are positive as well as negative. Revolution through electronic trading and dematerialization has increased number as well as volume of transactions robustly. The political and economic scene across the globe witnessed marked changes during this period. Therefore the study has

measured average mean and compounded annual growth rate of different indexes of India and China.

Study has founded significant relationship between Indian Stock Markets and China at .01 significance level and hence hypothesis (Ho 1: There is no significant degree of correlation in Indian and Chinese Stock markets) is rejected.

### FINDINGS & SUGGESTIONS

As study is conducted for a long period, therefore investors can take the benefit of diversification in long periods. Hence, investors can take the advantages of diversification by investing in countries having high degree of negative correlation with their home country. At the same time, they can take the benefits of investment in those countries which have high restriction for entry of foreign investors or having very high transaction costs by investing in highly positive country vis a vis the restrictive country. But as the economies are undergoing through different reforms and fundamentals keep on changing therefore, due care should be taken while taking investment decisions. This study alone should not be taken as the basis of selection of stock market.

The correlation between India and China (.770) which shows the least correlation between these two stock exchanges. But these two stock exchanges are significantly related and affect each other's operation to the market volatility. The prices of stocks on markets around the world do not move together synchronously because the economic system in which those markets are located, have dissimilar environments in terms of taxation, Industrial growth, Political stability, Monetary Policy and other factors. Low levels of co-movement of stock prices offer investors the benefit of diversifying their holdings across the markets of countries. That is, investors who allocate some of their portfolio to share from other countries can increase the portfolio's expected return with no increase in risk. This benefit of international diversification has led many investors to allocate some of their wealth to foreign markets and shares of foreign firms.

Methods of trading vary considerably throughout the world. Electronically assisted market-maker trading

has become prevalent throughout the world. Another trend in trading organizations is that they are becoming or are considering becoming public companies wherein their stock in the exchange is owned and traded by the public.

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