



An Empirical Analysis on Performance of Indian Indices over World Indices - A Study of Economy Recovery Phase

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ABSTRACT

Stock exchange provides a domicile to buyers and sellers of the stocks. Stock market is barometer of economy. If indices are hovering, means country is running on the path of development and prosperity with the maiden of stock exchange the money circulation increases at a highest pace and economy runs smoothly. Globally, lies an interconnection among stock exchanges world over. It can be useful and interesting to map over such interconnection. This study is to analyze the relationship between Indian indices and global indices. Many Studies have been conducted to test the linkages and integration between exchanges of the developed nations. Little research has been conducted about the inter-linkages between the nations from Asia. Research focuses on the correlation between indices with respect to nominal return, inflation, real return, sharp's ratio, risk free rate as a benchmark stock exchanges of CHINA, INDIA, JAPAN, SINGAPORE, U.S.A. and linkages among them.

KEYWORDS

Stock exchange, Indices, correlation

INTRODUCTION

In this context, several issues arise. Is the Indian stock market integrated with global markets? What is the extent of such market correlation? Which global markets have dominant influence on India's stock market? While seeking answers to these questions is the major objective, also have the motivation of contributing to the literature the experience of a leading emerging market economy like India. Following the dominant perspective in the applied finance literature, use correlation to gauge the correlation of India's stock market with global markets such as the India, china, Singapore, USA and Japan which are key financial centers in Asia. The study that follows comprises few sections, including a brief review of theoretical and applied finance perspectives relating to stock market correlation, stock price variables and data used in the study, stylized facts, empirical analysis and summary findings.

PAST STUDIES

In recent years, portfolio investments by individual and institutional investors in international stocks, bonds and other financial securities have grown at a phenomenal pace. Investors diversify portfolio holdings internationally to reduce risk, by holding securities that are less than perfectly correlated. Securities returns are much less correlated across countries than within a country. This results in a relatively low correlation among international securities. Rapid transformations of the financial information to the investors across the globe due to Growing reach information technology. The relationships between international stock markets have become increasingly important since

Study also focuses to capture the trends, similarities and patterns in the activities and movements of the Indian index in association to its international counterparts, **Debjiban Mukherjee** has studied whether various stock exchanges globally have any impact on each other or they are related in any way with regard to their movements and, if so, to what extent? What impact would the result have on the understanding that international diversification of investment is desirable and profitable with regard to both risk and return?

To measure the impact any indices on investment study assistance level of integration among the markets is high, then investing in different markets will not generate long term gains from portfolio diversification or reduction in risk. **Shegorika Rajwani and Jaydeep Mukherjee** have investigated the linkages between Indian stock markets with other Asian stock mar-

kets. As in time of global trade every investor has prospects to invest their money in the country of their choice, not just in their own country to get multiple returns by diversifying their portfolio.

Gagan Deep Sharma and B.S. Bodlastudy that the inter-linkages between stock markets of developing countries namely India, Pakistan and Sri Lanka.

Saleem Muhammed (2012) results of the Granger causality tests indicate interdependence between South-East market returns. Overall, the results indicate an increase in the integration between the South-East markets after the global financial crisis. **BalKrishan and Rekha Gupta (2011)** the result of the study also shows that Seasonal effect is not seen in any stock market; there are insignificant differences between all months of stock markets. It means it is not possible to earn abnormal returns. **Terence Tai-Leung Chong, Sam Ho-Sum Cheng & Elfreda Nga-Yee Wong (2010)** results show discrepancies in trading-rule performance among the BRIC markets. This provides indirect evidence for the general observation that stock markets are getting more efficient over time.

REASERCH PROBLEM

The direct effect of stock market activity can impact a nation's economy in multiple ways. Stockrise; confidence spreads, spending and investments grow and vice versa. Thus, nobody can predict the stock movements exactly. Also factors affecting various stock indices are different from one other and their modus operandi differs from one another. However, they are similar in few aspects.

Study analyze, whether the global indices is affected by the Indian indices or not and how Indian indices are interrelated with other major indices of the world? What will be the impact of these indices on the decision of Indian investor's as well as overseas investor's.

RESEARCH OBJECTIVE

To measure impact of Indian indices over the global indices i.e. Indian indices is correlated with other leading stock market of the world

- The performance (Return) of Indian indices with compare to global indices
- Determine whether there is any benefit to foreign investors from investing, and diversifying, in the Indian stock market

- Research also focuses on the Indian stock market and its overall economy in order to improve understanding of foreign investor's opportunities in India.
- The dynamic interdependence and long-run relationships between the stock markets.

HYPOTHESES

Ho: there is significant impact of Indian indices over world indices

Ha: there is no significant impact of Indian indices over world indices

SAMPLING: random sampling method

TABLE: 1 SAMPLING

Sr. No.	Country	Index	Monetary Authority
1	China	SHANGHAI COMPOSITE	The People's Bank of China
2	India	BSE	Reserve Bank of India
3	India	NSE	Reserve Bank of India
4	Japan	NIKKEI	Bank of Japan
5	Singapore	Straits Times	Monetary Authority of Singapore
6	United States of America	NASDAQ	Federal Reserve

NOMINAL RATE OF RETURN

The amount of money generated by an investment before expenses such as taxes, investment fees and inflation are factored in.

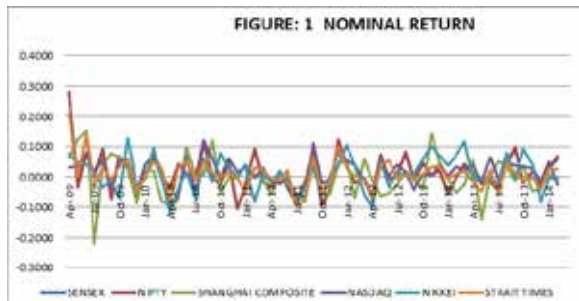


TABLE: 2 CORRELATION OF NOMINAL RETURN

Nominal Return	SENSEX	NIFTY	SHANGHAI COMPOSITE	NASDAQ	NIKKEI	STRAITS TIMES
SENSEX	1.0000	0.9963	0.2773	0.5106	0.3395	0.7914
NIFTY		1.0000	0.2531	0.5019	0.3376	0.7921
SHANGHAI COMPOSITE			1.0000	0.4284	0.2506	0.4437
NASDAQ				1.0000	0.5844	0.6263
NIKKEI					1.0000	0.5041
STRAITS TIMES						1.0000

SENSEX has strong positive correlation with the entire index Whereas, NIFTY also has positive correlation with the entire index leading with STRAITS TIMES i.e. 0.7921 on the other side, NIKKEI and SHANGHAI COMPOSITE has low positive correlation with other index.

INFLATION

Inflation means excess of money supply in economy. Today, most economists favor a low and steady rate of inflation.

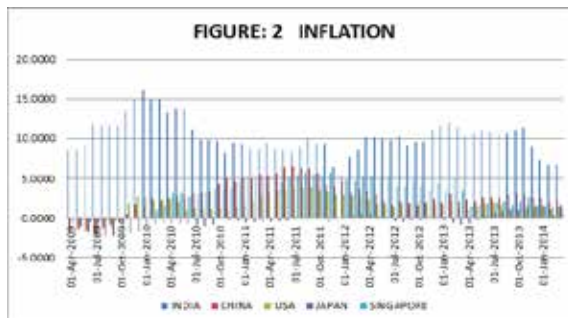


TABLE: 3 CORRELATION OF INFLATION

INFLATION	INDIA	CHINA	U.S.A.	JAPAN	SINGAPORE
INDIA	1.0000	-0.3147	-0.1234	-0.4427	-0.2854
CHINA		1.0000	0.8318	0.3901	0.8047
U.S.A.			1.0000	0.3681	0.7745
JAPAN				1.0000	0.2186
SINGAPORE					1.0000

From the above chart it has clearly revealed that inflation of India is very high then the other country whereas, the inflation of China and Japan is comparative good with respect to India. On the other side inflation rate of U.S.A. describe strong economy of the country.

REAL RATE OF RETURN= Nominal Return – Inflation

The annual percentage return realized on an investment, which is adjusted for changes in prices due to inflation or other external effects.

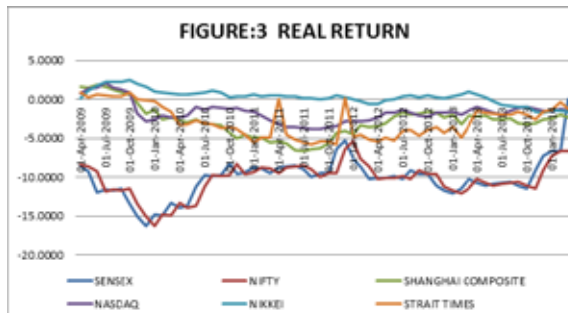


TABLE: 4 CORRELATION OF REAL RETURN

Real return	SENSEX	NIFTY	SHANGHAI COMPOSITE	NASDAQ	NIKKEI	STRAITS TIMES
SENSEX	1.0000	0.8365	-0.3201	-0.1498	-0.5570	-0.2250
NIFTY		1.0000	-0.2974	-0.1123	-0.4378	-0.2649
SHANGHAI COMPOSITE			1.0000	0.8330	0.3986	0.7228
NASDAQ				1.0000	0.3752	0.6328
NIKKEI					1.0000	0.2764
STRAITS TIMES						1.0000

Real return has positive correlation with SENSEX and NIFTY whereas, SENSEX and NIFTY has negative correction with all other indices. SHANGHAI COMPOSITE has high correlation with NASDAQ and straits times and low correction with NIKKEI

RISK-FREE RATE OF RETURN

Theoretical rate of return of an investment with zero risk. The risk-free rate represents the interest an investor would expect from an absolutely risk-free investment over a specified period of time.

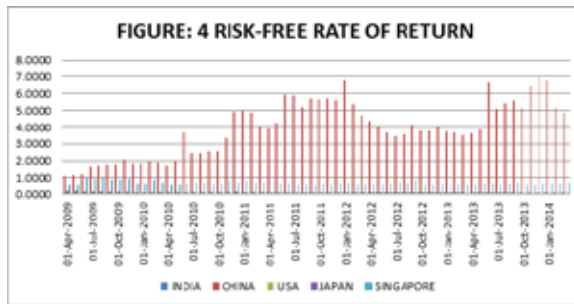


TABLE: 5 CORRELATION OF RISK-FREE RATE OF RETURN

RISK FREE	INDIA	CHINA	U.S.A.	JAPAN	SINGAPORE
INDIA	1.0000	0.8555	-0.5822	-0.6749	-0.5093
CHINA		1.0000	-0.6908	-0.6818	-0.4269
U.S.A.			1.0000	0.5685	0.4047
JAPAN				1.0000	0.3960
SINGAPORE					1.0000

Risk free rate of India has positive correlation with china and negative correlation with U.S.A., Japan and Singapore. Whereas, China having negative correlation with other countries. Singapore has low correlation with U.S.A. and Japan

SHARPE RATIO

$$= \frac{\bar{r}_p - r_f}{\sigma_p}$$

Where:

- \bar{r}_p = Expected portfolio return
- r_f = Risk free rate
- σ_p = Portfolio standard deviation

Sharpe ratio =

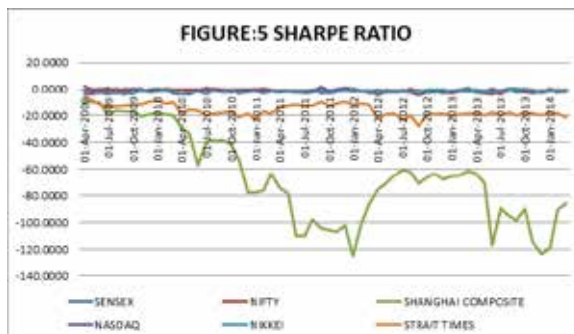


TABLE: 6 CORRELATION OF SHARPE RATIO

SHARPE	SENSEX	NIFTY	SHANGHAI COMPOSITE	NASDAQ	NIKKEI	STRAITS TIMES
SENSEX	1.0000	0.1360	0.4205	-0.3908	-0.2234	0.1106
NIFTY		1.0000	0.5393	0.0200	0.0366	0.3280
SHANGHAI COMPOSITE			1.0000	-0.4916	-0.2233	0.2515
NASDAQ				1.0000	0.4219	0.2013
NIKKEI					1.0000	-0.2247
STRAITS TIMES						1.0000

Sharpe ratio show positive correlation with SENSEX NIFTY SHANGHAI COMPOSITE and straits times while negative correlation with NASDAQ and NIKKEI on the other hand, NIFTY and NASDAQ has positive Sharpe ratio with all other indices

CONCLUSION

Correlation between developed and emerging stock indices has great importance because strong linkage reduces insulation of domestic market from any global shock and creates implications, whereas weak market linkage offers potential gains from international diversifications and affects development of the emerging markets. This study investigates interdependent and volatility spillover across international stock indices using correlation

The monthly closing prices of the Sensex (India), nifty (India), Shanghai composite (china), Nikkei 225 (Japan), NASDAQ (USA), straight time (Singapore) are used from april2009 to march 2013.

Further, the results reveal that such indices deviate from equilibrium level, but some are correction to reestablish equilibrium in the long run. This implies that the US and Japan stock markets lead other markets suggesting that any external news arrival simultaneously received by both markets and then transmitted to other international stock markets. In case of volatility transmission, the study finds a bidirectional volatility spillover between the US and Indian stock markets. Finally, the results show that a correlation is found from India to other indices.

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