



A Comparative analysis of the major stock market indices of BRICS Countries

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Abstract: *Under the globalization world financial markets and economics are increasingly integrated due to free flow capital and international trade. Further, globalization has increased co-movement in stock prices across international markets. BRICS is a grouping acronym that refers to the countries of Brazil, Russia, India, China & South Africa which are all deemed to be at a similar stage of newly advanced economic development. There is a lot of importance being associated with BRICS nations in the recent past saying that they are going to be the next super powers in the world markets by 2050 (Goldman Sachs Report). His paper examines the dependence structure between the emerging stock markets of the BRICS countries. This study will use monthly closing price of respective indices, data of 8 years are used for the comparison purpose. The average monthly closing data from 1st January 2010 to 31st December 2017 will be taken to check the normality and relationship that exist in BRICS Countries. In This paper analyzes the dynamic interrelationship among the BRICS countries.*

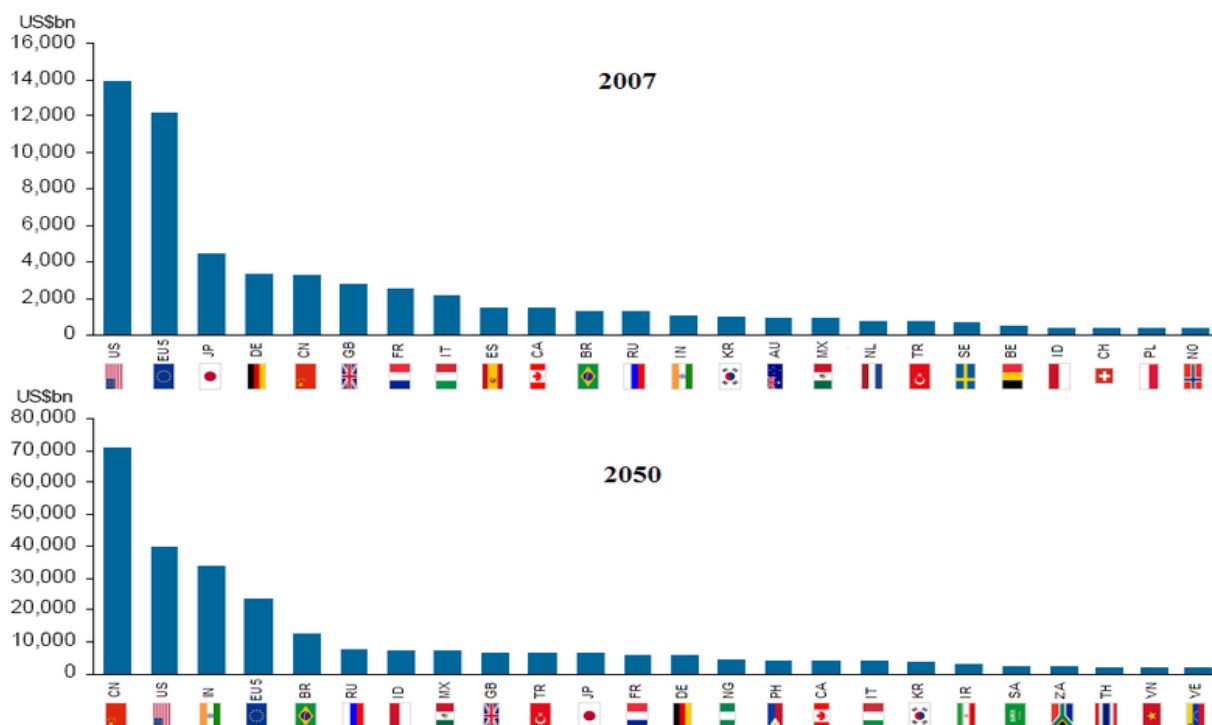
Key words: *BRICS, Superpower, interrelationship, emerging stock market*

I. INTRODUCTION

The term BRICs has been the subject of much debate since it was coined in 2001 to define the largest emerging markets in the world. In 2001, Jim O'Neill at the Goldman Sachs Bank published a paper where he coined the term "BRICs" in order to identify the largest emerging markets in the world. The BRICs, an abbreviation consisting of the first letter of each of the four BRIC countries' names - Brazil, Russia, India and China - have been in the limelight throughout the 2000s mainly because of their economic development and potential. O'Neill's prediction was that the BRICs, China in particular, would experience significant economic growth and eventually become dominant actors economically on the international stage.

The term "BRIC" was coined by Jim O'Neill of Goldman Sachs in the year 2001. "BRIC" is a collection of Brazil, Russia, India and China, the most promising emerging market club. The term "BRIC" expanded to "BRICS" in the year 2010, with the inclusion of South Africa in the BRIC basket. The present study has not considered the stock market of South Africa to capture the co-movement because the inclusion of South Africa was done in the year 2010 after the financial crisis of 2007-2009. Secondly, apart from the micro and macroeconomic fundamentals, markets all over the world also get influenced by emotions and herding behavior of the investors. The study assumes that if South Africa would have been the part of the BRIC club well before the crisis; then the response of the BRICS' stock markets collectively would have been different during the crisis period and afterwards.

BRICS Countries have many specialties like Area of Land, to gather BRICS cover the landmass of more than 1/4th of the Earth. Other specialty is Population, As far as the population is concerned more than 42% of the world population are living in these five countries. In terms of foreign reserve, four out of five countries are there in the list of top 10. China has the largest foreign reserve with the top position while Brazil, India and Russia are at the position of 7th, 8th and 9th respectively. As far as GDP is concerned four out of five countries are also in the list of top 10. China, India, Russia and Brazil are their in the top ten list while South Africa at the 29th position. Together GDP of BRICS is approximately 1/3 of total GDP of the WORLD. So the BRICS countries are very potential countries.



Source: <http://www.globalsherpa.org/wp-content/uploads/2011/04/brics-2050-goldman-sachs-projections-flags-2007.png>

As equity markets developed, different categories of investors started participating in the market. The investors' interest in international diversification has increased with relaxation of capital control among the economies. International diversification of portfolio assets improves the risk-reward ratio. However, when equity markets are "correlated", the benefit of international diversification is limited. The presence of common factors limits the amount of independent variation of the equity markets.

II. REVIEW OF LITERATURES

Chittedi (2009)

The present study found that US, and Japan market factors influencing Indian stock market. It might be because of maximum international trade commercial activities between these countries.

Indian stock market is not influencing by UK, Brazil, Russia and China markets. But Brazil and Russia markets are influencing by Indian stock market. The study finally conclude that India and developed countries markets USA, UK, Japan, and other Emerging BRIC markets highly co integrating during the period of January 1998- Aug 2009.

Gupta (2011)

Analyzed the dynamic relationship among the emerging countries specially BRIC countries in condition of financial turmoil. The time span from the year 2008 till now seemed to be full of financial tantrum – Sub Prime Crisis, US debt Crisis and European debt crisis. He attempted to quantify the interrelationship between these promising countries. It proved that the economy of India, Russia, and China Granger causes the Brazil economy but the converse is not true. But Russia does not granger cause the Indian economy but Indian economy granger causes the Russian economy. Granger causality test gives statistic that china economy have the bidirectional causality with India and Russia. Thus Chinese economy is largely interdependent of Indian and Russian Economy.

Singh and Sharma (2012)

Examined the inter linkages of Brazil, Russia, India and China. The results revealed that there are visible effects of stock exchanges on each other. Russian, Indian and Brazilian stock markets affect each other and also effected by each other but Chinese stock market was not affected by these markets and these markets were affected by Chinese stock market.

Sharma et al. (2013)

Studied the interlinkages between Brazil, Russia, India, China, and South Africa (BRICS) stock markets with the help of benchmark indices of these stock exchanges. The study revealed that the BRICS stock markets were influenced by each other, but not to a great extent. It implies that there exists opportunities for diversification of the investors among the stock exchanges of BRICS. It was also observed that there are domestic factors (macroeconomic variables) that influence the stock markets.



Dasgupta (2014)

He found only one co-integration, i.e., long-run relationships and also short-run relationships in between the Indian and Brazilian stock markets. It was found that the Indian stock market has strong impact on Brazilian and Russian stock markets. The interdependencies (mainly on India and China) and dynamic linkages were also evident in the BRIC stock markets. Overall, it was found that BRIC stock markets are the most favorable destination for global investors in the coming future and among the BRIC the Indian stock market has the dominance. On the basis of above, it is seen that a gap is prevalent. This gave an origin to the objective of whether Indian stock market is interdependent on international stock markets or not so that this gap can be filled.

III. RESEARCH METHODOLOGY

Sample & Data Source

Table no. 1 Sample Indices & Stock Exchange			
Country	Stock Exchange	Sample	Launch
Brazil	BM&FBOVESPA	IBOVESPA	1968
Russia	Moscow Stock Exchange	RTS	1997
India	Bombay stock exchange	S & P SENSEX	1986
China	Shanghai Stock Exchange	SC COMPOSITE	1990
South Africa	Johannesburg Stock Exchange	FTSE JSE	2002

Source: Data of all stock exchange is collected from www.investing.com

Descriptive Statistics:

Table no. 2 Descriptive Statistics					
	I Bovespa	RTSI	Sensex	S C Composite	FTSE - JSE
Mean	58104.45	1279.72	22934.58	2749.88	43177.92
Standard Error	817.64	32.98	524.08	57.46	999.59
Median	57188.19	1293.35	21142.32	2740.53	45886.89
Standard Deviation	8011.22	323.22	5134.92	563.06	9793.97
Range	34780.53	1306.85	18485.38	2632.53	33514.01
Minimum	40406	737.35	15454.92	1979.21	26258.82
Maximum	75186.53	2044.20	33940.30	4611.74	59772.83
Largest(1)	75186.53	2044.20	33940.30	4611.74	59772.83
Smallest(1)	40406	737.35	15454.92	1979.21	26258.82

Source: Researcher processed in MS Excel from the collected data from www.investing.com for the time period of 1st January 2010 to 31st December 2017

Correlation

Table No.3 Correlation Metrics					
	I Bovespa	RTSI	S & P Sensex	S C Composite	FTSE – JSE
I Bovespa	1	0.496494	-0.00288	0.160153	-0.2776323
RTSI	0.4964943	1	-0.732737	-0.445932	-0.7839502
Sensex	-0.00288	-0.7327	1	0.615966	0.9183091
S C Composite	0.1601535	-0.44593	0.615966	1	0.4382646



FTSE – JSE	-0.277632	-0.78395	0.918309	0.438264	1
<i>Source: Source: Researcher processed in MS Excel from the collected data from www.investing.com for the time period of 1st January 2010 to 31st December 2017</i>					

Here the author used the multiple correlations to understand the co-movement of major stock market indices of the BRICS Countries. As per the result of the data analysis of last eight years i.e. 1st January 2010 to 31st December 2017, it can be clearly seen that the correlations between I Bovespa and S & P Sensex is -0.002 which represents that there is no relations between the market movement of Indian stock market and that of Brazil. As far as the co - movement of India and Russia is concerned, it is -0.7327. It represents that there is a strong negative correlations between the market movement of India and Russia. On the other hand there are positive correlations are found amongst the India, China and South Africa. The result of correlation analysis of India – China it is 0.6159 which shows that there is a positive relations between stock market of India and China. Out of the correlations of four countries, Indian stock market is highly correlated with the South African Stock market. Here the above correlation table represents the answer as 0.9183. It shows the strong correlations between these two countries.

IV. CONCLUSION

Inter linkages between emerging stock markets 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. To check the prices of Indices are normally distributed.

The present study shows that Indian stock market is having no correlation with Brazilian stock market for the study period. While India has a strong negative correlation with Russian stock market, while a positive correlation with Chinese stock market and a strong correlation with South African stock market.

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