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An Empirical Examination of Returns on Select Asian Stock Market Indices

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Abstract

This study empirically examines the correlation among the returns of six select Asian stock market indices of India, China, Japan, Hong Kong, Singapore, and Taiwan. The study is conducted over a longer time period of 2000 – 2012. The correlation results provide useful information for foreign institutional investors, portfolio managers, regulators, and policy makers in designing appropriate strategies to maximize risk adjusted returns.

JEL classification numbers: G1
Keywords: Asian stock markets, BSE Sensex , Nikkei 225 index, Taiex Index, Hang Seng Index, Singapore Strait Times index, Shanghai composite index.

1 Introduction

Stock markets play a crucial role in the growth of global economies. The stock market in India holds a prominent place in Asia and the world. Deregulation, market liberalization, and foreign domestic investment have continually accelerated the growth and efficiency of the Indian stock market. The Bombay Stock Exchange (BSE) is one of the oldest stock exchanges in the world and the Indian stock market has the third largest investor base of about 20 million investors (Siddiqui, 2009).The present study focuses on a comparative analysis of the performance of the Indian stock market and its various Asian counterparts. This study may be of interest to foreign institutional investors, portfolio managers, corporate executives, and policy makers.

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2 Literature Review

There have been numerous studies focused on Asian stock markets. Cheung and Mak (1992) found that the US stock markets had an impact on many of the Asian stock markets with the exception of three relatively closed markets in Korea, Taiwan and Thailand. They also found that the Japanese stock market had less influence on other Asian stock markets. Arshanapalli et al. (1995) examined the stock market performance between the US and six major Asian stock markets before and after October 1987 market crash in the US. They concluded that the Asian equity markets were less integrated with Japanese equity market than they were with the US stock market. Selvam et al. (2007) studied evidences of time varying volatility which exhibited clustering, high persistence and predictability for almost all the ten Asian market indices in their sample. The present study aims to add to the literature by using a more robust sample over a longer time period than prior studies that focused on the performance of Asian stock markets.

3 Research Methodology

The present study covers a longer time period from 01/07/2000 to 30/06/2012. To better understand time varying results, the time period was divided into three equal parts. The first period is from 01/07/2000 to 30/06/2004, the second period from 01/07/2004 to 30/06/2008, and the third period from 01/07/2008 to 30/06/2012.

The following stock indices were selected for study from six Asian stock markets. The BSE Sensex index from India, the Hang Seng index of Hong Kong, the Nikkei 225 index from Japan, the Taiex index from Taiwan, the Shanghai Stock Exchange Composite Index from China, and the Straits Times Index from of Singapore. The sample indices are listed below in Table 1.

Table 1: Select Asian Stock market indices

l. o	**Country/ Region**	**Sample Index**	**Period**	**Observations (n)**
1	India	BSE Sensex 30 Index (SENSEX)	01/07/2000 - 30/06/2012	2995
2	Hong Kong	Hang Seng Index (HSI)	01/07/2000 - 30/06/2012	2992
3	Japan	Nikkei 225	01/07/2000 - 30/06/2012	2941
4	Taiwan	Taiwan Taiex Index (TWII)	01/07/2000 - 30/06/2012	2938
5	China	Shanghai Stock Exchange Composite Index	01/07/2000 - 30/06/2012	3050
6	Singapore	Straits Times Index (STI)	01/07/2000 - 30/06/2012	3017

Source: www.finance.yahoo.com

The following research hypothesis is tested in this study.

NH1 There is no correlation among the indices of Asian stock markets used in the study.

4 Results

The descriptive statistics for the select six sample Asian stock market indices for the time period 01-07-2000 to 30-06-2012 are shown below in Table 2. The mean return for the BSE Sensex was greater than other indices. Similarly, the BSE Sensex index exhibited the highest standard deviation in daily returns. The analysis of skewness and kurtosis of the stock market indices indicate that there was non-symmetric distribution of data, with fat tails as compared with normal distribution. Besides, the Jarque-Bera (JB) values of the indices indicate that none of the indices were normally distributed.

Table 2: Descriptive Statistics (01-07-2000 - 30-06-2012)

Asian Stock Index / Descriptive Statistics	Japan (Nikkei 225)	Hong Kong (HSI)	Taiwan (TWII)	China (Shanghai SE Composite)	Singapore (Straits Times Index STI)	India (BSE SENSEX)
Mean	-0.019909	0.005204	-0.002703	0.001207	0.012981	0.045819
Median	0.007405	0.017274	0.039783	0	0.038853	0.112289
Maximum	13.23458	13.40681	6.52462	9.400787	7.530528	15.98998
Minimum	-12.11103	-13.58202	-9.936015	-9.256154	-9.215508	-11.80918
Std. Dev.	1.588385	1.612896	1.542345	1.608092	1.257101	1.627131
Skewness	-0.371539	0.008387	-0.257102	-0.126544	-0.325082	-0.119888
Kurtosiss	9.698445	10.86828	5.597468	7.334429	8.379894	9.907475
Jarque-Bera	5566.006	7718.12	858.2934	2395.69	3691.548	5961.386
Observations	2941	2992	2938	3050	3017	2995

Source: (http://finance.yahoo.com/) and computed from E-Views

The results of correlation of the six Asian stock market index returnsfor the period 01-07-2000 to 30-06-2004 are given in Table 3.

Table3: Correlation Results (01-07-2000 - 30-06-2004)

Market Index	Japan	Hong Kong	Taiwan	China	Singapore	India
Japan	1	0.1200**	0.0390	0.0810**	0.0440	-0.0100
Hong Kong	0.1200**	1	0.0310	-0.0190	0.0460	0.0410
Taiwan	0.0390	0.0310	1	0.0220	-0.0210	0.0250
China	0.0810**	-0.0190	0.0220	1	0.0340	-0.0340
Singapore	0.0440	0.0460	-0.0210	0.0340	1	0.1450**
India	-0.0100	0.0410	0.0250	-0.0340	0.1450**	1
**. Correlation is significant at the 0.01 level (1-tailed).						

Source: (http://finance.yahoo.com/) and Computed using SPSS (Version 16)

The correlation results for the six Asian stock market returns for the period 01-07-2004 - 30-06-2008 are provided in Table 4 below.

Table 4: Correlation results (01-07-2004 - 30-06-2008)

Market Index	Japan	Hong Kong	Taiwan	China	Singapore	India
Japan	1	-0.0470	0.077**	0.0140	-0.067*	0.0050
Hong Kong	-0.0470	1	0.0330	0.0460	-0.0100	0.0330
Taiwan	0.077**	0.0330	1	-0.0480	-0.058*	0.08**
China	0.0140	0.0460	-0.0480	1	-0.06*	0.0220
Singapore	-0.067*	-0.0100	-0.058*	-0.06*	1	0.085**
India	0.0050	0.0330	0.08**	0.0220	0.085**	1
**. Correlation is significant at the 0.01 level (1-tailed).						
*. Correlation is significant at the 0.05 level (1-tailed).						

Source: (http://finance.yahoo.com/) and Computed using SPSS (Version 16)

The correlation results for the returns on six Asian stock market indices for the period 01-07-2008 to 30-06-2012 are given in Table 5 below.

Table 5:Correlation results (01-07-2008 - 30-06-2012)

Market Index	Japan	Hong Kong	Taiwan	China	Singapore	India
Japan	1	.131**	0.048	.054*	0.026	.094**
Hong Kong	.131**	1	0.022	0.037	-0.032	0.025
Taiwan	0.048	0.022	1	.054*	.109**	0.047
China	.054*	0.037	.054*	1	.098**	-0.02
Singapore	0.026	-0.032	.109**	.098**	1	-.053*
India	.094**	0.025	0.047	-0.02	-.053*	1
**. Correlation is significant at the 0.01 level (1-tailed).						
*. Correlation is significant at the 0.05 level (1-tailed).						

Source: (http://finance.yahoo.com/) and Computed using SPSS (Version 16)

In the light of the correlation results from Tables 3, 4 and 5, market participants may diversify their holdings among the six Asian countries appropriately to maximize their

risk adjusted returns. The following chart in Figure 1 graphs the collective returns in the various indices in the select six Asian stock markets used in this study.

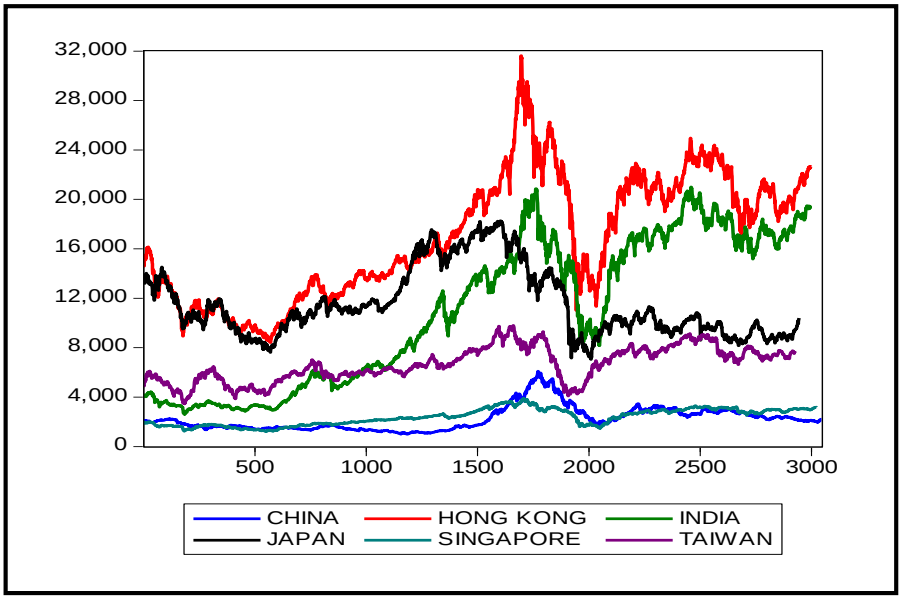

Figure 1: Index Returns (2001 – 2012)
Source: (http://finance.yahoo.com/) and Computed from E-Views

5 Conclusion

The study has important implications for the foreign institutional investors, portfolio managers, regulators and policy makers. The correlation results and the graphical chart show a high degree of correlation among the six Asian stock market indices used in this study. This study contributes to the existing literature by undertaking a robust large scale study encompassing a longer time period from 2000 – 2012.

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