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**CONTRIBUTIONS TO BOOKS**

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

**JOURNAL AND OTHER ARTICLES**

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

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**COINTEGRATION OF KARACHI STOCK MARKET WITH OTHER ASIAN STOCK MARKETS****FEHMIDA AKRAM****EX. STUDENT****INSTITUTE OF MANAGEMENT SCIENCES****BAHAUDDIN ZAKARIYA UNIVERSITY****MULTAN****AISHA AKRAM****EX. STUDENT****INSTITUTE OF MANAGEMENT SCIENCES****BAHAUDDIN ZAKARIYA UNIVERSITY****MULTAN****SHANZA ARSHAD****EX. STUDENT****INSTITUTE OF MANAGEMENT SCIENCES****BAHAUDDIN ZAKARIYA UNIVERSITY****MULTAN****MAZHAR IQBAL****EX. STUDENT****INSTITUTE OF MANAGEMENT SCIENCES****BAHAUDDIN ZAKARIYA UNIVERSITY****MULTAN****ABSTRACT**

*This paper investigates the cointegration between the stock market price indices of Karachi stock exchange and the major stock exchanges of Malaysia (FTSE), India (BSE 30) and South Korea (KOSPI) using daily data spanning January 2001 to January 2010. The Engle-Granger two step procedure shows that there is cointegration between KSE and BSE 30 index as well as between KSE and KOSPI. While the Engle-Granger procedure shows that the linear combination of FTSE and KSE 100 index is non stationary. Based on the empirical results obtained from these two residual-based cointegration tests, it is found that investors should not diversify their funds in the Indian and south Korean markets while they could diversify in the Malaysian markets. By doing this they can reduce the associated systematic risks across these countries.*

**KEYWORDS**

cointegration, stock market, KSE, BSE 30, stationary, Engle-Granger

**1) INTRODUCTION**

Today is the world of globalization which is leading it to a new direction. So the financial world is also reshaping itself. Due to financial liberalization and advancement of technology, new market structures and practices are required. So we are entering in a new world that is financially integrated. So the more opportunities for portfolio diversification are arising.

The interest of various policymakers and investors lie in taking the benefit of efficiency increasing characteristics of market interaction. The co integration of stock markets of various countries can be due to many reasons. For example, global capital movements and the presence of economic ties and regional policy coordination among countries can directly or indirectly interconnect their stock prices through time. Due to the various factors, interaction of the financial markets of the world has become a hot topic of study in the financial literature. These factors are introduction of new innovative financial products; scientific trading and settlement systems, extensive inter border movement of funds and numerous technological innovations.

The aim of the study is to understand the dynamic inter-linkages between Karachi stock exchange and the major stock exchanges of Malaysia (FTSE), India (BSE 30) and South Korea (KOSPI). The work on these markets is not conducted before. So if no cointegration is found then the investors of these countries can take the benefit of diversification. Therefore the policy makers and regulators in these countries will not be worried about any contagious effects.

The paper is divided into four sections. Section II describes the previous literature on the inter-linkages and cointegration of the financial markets. Section III describes data and methodology adopted in the study. Section IV elaborates the empirical results. The Section V consists of conclusion, limitations as well as future recommendations.

**2) LITERATURE REVIEW**

In academic journal of finance, the issue of co integration between Asian markets is studied by using co integration techniques. The main issue that is being addresses is that either market is highly correlated or not. Markets integration benefits the region by providing efficient allocation of capital flow, through diversification of risk factors and lower probability of shocks.

There is large growing literature on stock market interdependence and integration. But according to data, methodology and theoretical model, there is no clear cut solution. Some previous work has have found that international stock markets are integrated (Arshanapalli & Doukas, 1993) (Eduardo, 1999). Some other researchers have found that stock markets are not interlinked (Smyth & Nandha, 2003) (Hamao, Masulis, & Ng, 1990).

Karachi stock exchange is not correlated with the equity markets of the developed world it means opportunities of diversification exist. It is also evident that USA's stock index S& P 500 is strongly correlated with the indices of European countries like UK, France and Germany. This may be because of free flow of funds between these countries and elimination of barriers. But strong correlation exists between European markets. Correlation analysis is weak technique as it does not discuss the cause and effect relationship so Cointegration and Granger causality is tested. Before application of Johansen-Juselius maximum likelihood ratio test, stationary of index series is tested by using Augmented Dickey Fuller test and Phillips-Perron test (Hassan, Saleem, & Abdullah, 2008).

Most of the studies on stock market interdependence in emerging markets have been done on the basis of geographical groups of markets, such as in the Asian or Latin American countries. Stock market interdependence in the emerging markets in Asia seems to be a widely accepted fact. (Masih & Masih, 1997) found a high level of interdependence among the stock markets of Thailand, Malaysia, the US, the UK, Japan, Hong Kong and Singapore from 1992 to 1997. Consistent with their later findings (Masih & Masih, 1999), (Masih & Masih, 1997) found a high level of interdependence among the markets of Taiwan, South Korea, Singapore, Hong Kong, the US, the UK, Germany and Japan for 1982 to 1994.

(Gupta & Guidi, 2012) has explored the relationship between Indian and Asian developed equity markets over the 1999-2009 periods. No co integration is found between Indian and other Asian markets and there is no long run relationship. This offers the diversification benefits to the investors.

(Singh, Kumar, & Pandey, 2009) have studied long run and short run integration in 15 countries with special focus on India. The countries and their respective stock index are BSE 30 (India), France (CAC 40), Germany (DAX 30), United Kingdom (FTSE 100), Hong Kong (Hang Seng), Indonesia (JSX Composite), Malaysia (KLSE), Korea (KOSPI), Pakistan (KSE 100), United States (NASDAQ), Japan (Nikkei 225), China (SSE Composite), Singapore (STI), Canada (S&P/TSX 60) and Taiwan (TSEC). From cointegration analysis it is concluded that BSE30 index has no cointegration with any of market. So investor can get benefits by diversifying their investment.

### 3) DATA AND METHODOLOGY

#### 3.1. DATA DESCRIPTION

Our selected sample consists of KSE 100 Index, BSE 30 Index, KOSPI index and FTSE. The Bombay Stock Exchange (BSE) equity market capitalization of the companies listed on the BSE was US\$1.63 trillion as of December 2010, making it the 4th largest stock exchange in Asia and the 8th largest in the world.. The BSE SENSEX, also called "BSE 30", is a widely used market index in India and Asia. Though many other exchanges exist, BSE and the National Stock Exchange of India account for the majority of the equity trading in India. Korea has sole stock exchange which has market capitalization of \$ 1.1 trillion. It has listed 1757 companies and major index is KOSPI. Kuala Lumpur Stock Exchange was renamed Bursa Malaysia Berhad has total market capitalization of MYR700 billion (US\$189 billion). Karachi Stock Exchange 100 Index (KSE-100 Index) is a stock index acting as a benchmark to compare prices on the Karachi Stock Exchange (KSE) over a period of time. KSE 100 index is capital weighted index and these top 100 companies has ninety percent share in market capitalization. The data consists of daily closing prices of Karachi Stock Exchange 100 Index and the following equity market indices of one South Asian Country named India and Asia-Pacific equity market indices: FTSE Bursa Malaysia Index and Korea Stock Exchange KOSPI Index and it is being collected from Yahoo Finance. The prices are taken from 1st January 2000 to 31st December 2010. To investigate the possibilities of cointegrational relationships between these stock markets, different pairs have been made:

- Cointegration between KSE 100 Index and Indian BSE SENSEX 30
- Cointegration between KSE 100 Index and FTSE Bursa Malaysia Index
- Cointegration between KSE 100 Index and KOSPI

All the data is being converted into the log form. Then to check cointegration, Engle-Granger procedure is being used. The first step to do this is to check the stationarity of the variables and then test cointegration between them. If these variables are non-stationary, then we will check whether their linear relationship must be stationary if the markets are to be co-integrated. If their relationship is non-linear, then there will be spurious regression situation.

#### STATIONARITY TEST

We perform unit root tests on these four time series in the 1st step to investigate whether they are stationary or not.

The Augmented Dickey-Fuller (ADF) unit root test is used for this purpose. The ADF regression equations are:

$$\Delta Y_t = bY_{t-1} + \epsilon_t \quad \tau \text{ statistics}$$

$$\Delta Y_t = a + bY_{t-1} + \epsilon_t \quad \tau_i \text{ statistics}$$

$$\Delta Y_t = a + b_0 + bY_{t-1} + \epsilon_t \quad \tau_i \text{ statistics}$$

Where  $\epsilon_t$  is white noise. The null hypothesis to check whether the variables are stationary or not, the following hypothesis is being developed:

$$H_0: r = 1$$

$$H_a: r < 1$$

If null hypothesis is rejected, it means that the data is stationary and if it is accepted it means data is non-stationary.

#### COINTEGRATION

In the 2nd step we will perform cointegration. If the variables are non-stationary, then we will run the regression of one variable on another and calculate their residuals. Then their residuals are being tested using ADF test, if they are stationary, it means there is cointegration, but if their residuals are non-stationary, it means there is no cointegration.

For this, following hypothesis is being developed:

$$H_0: \text{there is no cointegration.}$$

$$H_a: \text{there is cointegration.}$$

To check cointegration, t-ADF calculated value is being compared with t-ADF critical values. These critical values are being determined by the formula:

$$C(p) = \Phi_{\infty} + \Phi_1/T + \Phi_2/T^2$$

### 4) EMPIRICAL RESULTS

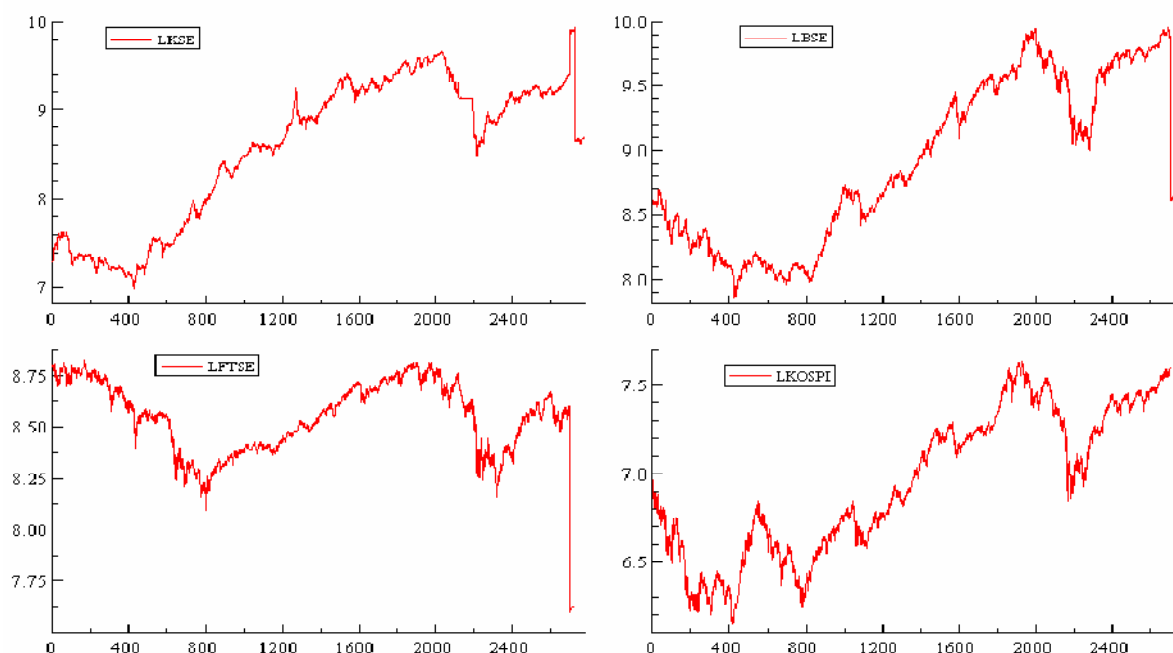
Using the ADF test, stationarity is being checked. And KSE 100 Index, BSE 30 index, FTSE Index and KOSPI are non-stationary. This non-stationarity is being checked by comparing ADF value with DF critical values. After comparing the values of ADF with DF table, null hypothesis is accepted leading to conclusion that data is non-stationary.

Unit-root tests (using kse.csv)								
The sample is: 4 - 2699								
LKSE: ADF tests (T=2696; 5%=-1.94 1%=-2.57)								
D-lag	t-ADF	beta Y_1	sigma	t-DY_lag	t-prob	AIC	F-prob	
2	2.119	1.0001	0.01550	2.206	0.0274	-8.333		
1	2.219	1.0001	0.01551	4.915	0.0000	-8.332	0.0274	
0	2.454	1.0001	0.01558			-8.323	0.0000	
LBSESENSEX: ADF tests (T=2696; 5%=-1.94 1%=-2.57)								
D-lag	t-ADF	beta Y_1	sigma	t-DY_lag	t-prob	AIC	F-prob	
2	1.382	1.0001	0.01733	-2.253	0.0243	-8.109		
1	1.318	1.0000	0.01734	3.733	0.0002	-8.108	0.0243	
0	1.424	1.0001	0.01739			-8.104	0.0001	
LFTSE: ADF tests (T=2696; 5%=-1.94 1%=-2.57)								
D-lag	t-ADF	beta Y_1	sigma	t-DY_lag	t-prob	AIC	F-prob	
2	-0.3225	0.99999	0.01328	-2.571	0.0102	-8.642		
1	-0.3084	0.99999	0.01329	-3.320	0.0009	-8.641	0.0102	
0	-0.2926	0.99999	0.01332			-8.637	0.0002	
LKOSPI: ADF tests (T=2696; 5%=-1.94 1%=-2.57)								
D-lag	t-ADF	beta Y_1	sigma	t-DY_lag	t-prob	AIC	F-prob	
2	0.7416	1.0000	0.01810	-1.445	0.1484	-8.023		
1	0.7211	1.0000	0.01810	0.0576	0.3912	-8.023	0.1484	
0	0.7352	1.0000	0.01810			-8.023	0.2437	



The level of significance being taken is 5%. The DF table value for  $\tau$  distribution at 5% is -1.65.

After this, cointegration test is being applied and for this, we have made the pairs that first we will check cointegration between KSE 100 Index and BSE 30 Index and KSE 100 Index with KOSPI and KSE 100 Index with FTSE Index.



#### 4.1. KSE 100 INDEX WITH BSE 30 INDEX

KSE 100 Index and BSE 30 Index show non-stationary properties. Then we will use OLS method where KSE 100 Index is taken as dependent variable and BSE 30 Index is taken as independent variable. After fitting the model, residuals  $\epsilon_t$  are being estimated. Then unit root is being applied on these residuals to check whether these two stock exchanges are co integrated or not.

```
residuals: ADF tests (T=2696; 5%=-1.94 1%=-2.57)
D-lag    t-adf      beta Y_1    sigma    t-DY_lag  t-prob      AIC    F-prob
2        -2.484*    0.99680    0.02490    -2.110    0.0349     -7.384
1        -2.530*    0.99674    0.02492     3.444    0.0006     -7.383    0.0349
0        -2.462*    0.99682    0.02497     -7.380    0.0003
```

After performing the unit root test, it is revealed that the linear combination of KSE 100 Index and BSE 30 Index is stationary. To further verify, the t-adf value is being compared with t-adf critical value. The critical value of t-adf at 5% is -1.9394 which less than t-adf calculated value is. So the null hypothesis is rejected i.e. there is cointegration between these two stock markets.

#### 4.2. KSE 100 INDEX WITH FTSE INDEX

FTSE index and BSE 30 index show non-stationary property. Then to check co integration OLS is applied KSE 100 index is taken as dependent variable and FTSE is independent variable.

```
residuals (KSE & FTSE): ADF tests (T=2696; 5%=-1.94 1%=-2.57)
D-lag    t-adf      beta Y_1    sigma    t-DY_lag  t-prob      AIC    F-prob
2        -1.396     0.99941    0.01759     1.061    0.2888     -8.080
1        -1.403     0.99941    0.01759     2.128    0.0334     -8.081    0.2888
0        -1.415     0.99940    0.01760     -8.080    0.0594
```

After applying the unit root test with no constant and no trend results show that the linear combination of these two indexes is non-stationary. To further check this result-adf (t-statistic) is being compared with t-adf critical value. As calculated value is less than table value. So it lies in acceptance region so null hypothesis is accepted i.e. there is no cointegration in these two stock exchanges.

#### 4.3. KSE 100 INDEX WITH KOSPI INDEX

KSE 100 Index and KOSPI Index exhibit non-stationary properties. Then residuals are being estimated by fitting the model using OLS method where KSE 100 Index is taken as Y variable while KOSPI is taken as X variable. To check cointegration, unit root is being applied.

Unit-root tests (using kse.csv)

The sample is: 4 - 2699

```
residuals1: ADF tests (T=2696; 5%=-1.94 1%=-2.57)
D-lag    t-adf      beta Y_1    sigma    t-DY_lag  t-prob      AIC    F-prob
2        -3.452**    0.99332    0.03608    -1.108    0.2680     -6.643
1        -3.486**    0.99326    0.03609     1.478    0.1394     -6.643    0.2680
0        -3.439**    0.99335    0.03609     -6.643    0.1816
```

By performing ADF test, the linear combination between KSE 100 Index and KOSPI appears to be stationary. It is further verified by comparing t-adf value with t-adf critical value. The critical value of t-adf at 5 % with no constant and no trend is -1.9394 that is less than calculated value i.e. -3.452. So the null hypothesis is rejected i.e. there is cointegration between these two stock markets.

## 5) CONCLUSION

This study examines the co integration between KSE 100 index with Malaysia (FTSE), India (BSE 30) and South Korea (KOSPI). To examine cointegration between stock exchanges we taken sample period of 2000 to 2010, firstly ADF test is applied to check stationary and non-stationarity. After fitting model we analyzed that all the series have non-stationary property. To check the cointegration residuals are founded and model is fitted using Engle Granger process. After it we have founded that there is cointegration between KSE 100 index and BSE 30 Indexes. It did not offer an opportunity to diversify the investment. This contradicts with our literature review. If we see the results of cointegration between KSE 100 index and KOSPI there is also co integration persists between these markets. So investors cannot ripen the benefits of diversification because both markets move side by side. If we analyze the results of cointegration between KSE 100 index and FTSE there is no cointegration in these markets. These two markets offer the benefits of diversification. Investors should flow the funds in these markets.

## 6. FUTURE RECOMMENDATIONS

As this study is conducted in a limited span of time and to check the cointegration, only Engle Granger procedure is applied. After studying the previous researches on cointegration in Asian markets especially in our selected sample there is little work being available in which these markets are studied together. So it can be emerging topic for further research to analyze cointegration and volatility in these markets by using different econometric techniques like Johansen cointegration as well as Granger Casualty test.

## 7. BIBLIOGRAPHY

1. Arshanapalli, B., & Doukas, J. (1993). International stock market linkages: Evidence from the pre- and post October 1987 period. *Journal of banking and finance*, 193-208.
2. Eduardo, R. (1999). Short-term and long-term linkages between the equity markets of Australia and its major trading partners. *applied finance econometrics*, 501-511.
3. Gupta, R., & Guidi, F. (2012). Cointegration relationship and time varying co-movements among Indian and Asian developed stock markets. *International review of Financial Analysis*, 21, 10-22.
4. Hamao, Y., Masulis, R. W., & Ng, V. (1990). Correlation in price changes and volatility across international stock markets. *Review of Financial Studies*, 281-307.
5. Hassan, A., Saleem, H., & Abdullah, M. S. (2008). Long-Run Relationships between an Emerging Equity Market and Equity Markets of the Developed World an Empirical Analysis of Karachi Stock Exchange. *International Research Journal of Finance and Economics*(16).
6. Masih, R., & Masih, A. M. (1997). Dynamic linkages and the propagation mechanism driving major international stock markets: An analysis of Pre- and Post-crash Eras. *The Quarterly Review of Economics and Finance Journal*, 37, 859-885.
7. Masih, R., & Masih, A. M. (1999). Are Asian stock market fluctuations due mainly to intra-regional contagion effects? Evidence based on Asian emerging stock markets. *Pacific-Basin Finance Journal*.
8. Singh, P., Kumar, B., & Pandey, A. (2009). price volatility and spillover across North American, European and Asian Stock Markets: With Special Focus on Indian Stock Market.
9. Smyth, R., & Nandha, M. (2003). Bivariate causality between exchange rates and stock prices in South Asia. *Applied Economics Letters*, 699-704.

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