SOCIAL SCIENCE REVIEW ARCHIVES
ISSN Online: 3006-4708
ISSN Print: 3006-4694
https://policyjournalofms.com

Integration of KSE Stock Index with Other Asian Countries: Empirical Evidence of Measuring Expected Returns on the Basis of Integration

Mr. Haq Nawaz Khan[1], Dr. Yasir Arafat[2] and Mr. Muhammad Mehtab Hussain[3]

[1] Lecturer, Department of Management Sciences, University of Chitral, KPK Pakistan, Email: haq.nawaz@uoch.edu.pk
[2] Lecturer, Department of Economics, University of Chitral, KPK Pakistan, E-mail: yasir.eco@uoch.edu.pk
[3] Lecturer, Department of Commerce, Federal Urdu University of Arts, Science and Technology Islamabad, Pakistan. E-mail: mmehtab.hussain@fuuast.edu.pk

Abstract
The purpose of this paper is to investigate the expected returns of KSE stock index based on integration among stock markets of Japan, China, India, Singapore and Malaysia from 2000 to 2012. Based on return co-movement of these countries' markets with KSE, expected returns are computed using the model of integration used by Kashif Ali in 2014. Empirical results showed weak relation of each country with KSE stock index returns but significantly influencing its returns in defining future returns on the basis of co-integration. Keeping the criteria of -0.008 to 0.008 as closer to 0 for difference between expected KSE returns computed based on regression analysis and actual results of 2013 and 2014, 70 percent results validated the model. Further we find that Japan is more integrated to KSE stock index returns than other country's stock markets.

Keywords: Stock Market Integration, Future Expected Returns, KSE stock

Introduction
Within the last three decades, globalization has extensively spread its impact among developed and developing countries (Beine, Cosma, &Vermeulen, 2010). Along with this, financial integration also gathered much importance, as reported by Bekeart and his fellows in the year 2005, in economic development of a country. Previous studies (De Jong & De Roon, 2005) suggested that the level of overall co-movement of stock returns is increasing with the passage of time. This increase in integration is irrespective of cultural variations prevailing among countries (Frijns, Tourani-Rad, & Indriawan, 2012). Nevertheless, globalization has stressed the classification of global stock index markets, co-movement of stock markets or indices and integration of financial markets (Asgharian & Nossman, 2011). Through this research an attempt has been made to answer that how KSE stock index return co-moves with the stock indices of China, Japan, Malaysia, Singapore and India? In 2002, it was reported (Yang, Kolari, Insik Min, 2002) that among emerging economies; India, Korea and Pakistan are unexplored countries. In the section of literature, argument will be made to develop a hypothesis for measuring the integration of KSE stock index return among Asian Stock index returns. Out of Asian financial system, fastest growing economies include Singapore, Japan, Malaysia, China and India. In year 2007, India's Bombay Stock Exchange was renowned for its largest listings and market capitalization of 1.8 trillion US $. According to the statistics in 2007, it was placed tenth rank in the global stock market. In a similar manner, based on market capitalization of 3.7 trillion US $, China's stock market became sixth largest stock exchange in global system (Raj & Dhal, 2008). The purpose behind measuring the integration of KSE stock index with few other largest Asian stock indices is to find effective and practical investment strategies. Researchers (Morana &

Beltratti, 2008) have shown that low integrated stock markets help in diversification of portfolio, to lower investment risks. Earlier studies also showed that emerging countries integration in stock market reports significant implications of diversification in Asian stock market (Masih & Masih, 2002). However, in 2005, Portes and Rey maintained geographic distribution an important factor for defining the equity flows and resulting returns on those equities. When placed in the context of geographic distribution of stock markets and their returns, Lucey and Zhang (2010) argued that un-segmented countries have highly correlated stock market returns and indices. Through this argument, one can infer the opportunity of availing of diversification benefits by creating a portfolio in low integrated stock markets. Many researchers are already working on development of different models to reap the benefits of low integration related to diversification of portfolio (Asgharian & Nossman, 2011; Waalti, 2010). Based on the above-mentioned significances of measuring integration among stock markets, it is crucial for domestic economists and international portfolio managers or investors (Baele, Ferrando, Hordahl, Krylova& Monnet, 2004) to know the prevailing level of integration among stock markets and co-movement of their returns. Furthermore, results of this paper will help Pakistani investors in specific and global investors in general to effectively manage their portfolios in low integrated stock markets.

Literature Review

Extensive work (Graham, Kiviaho, &Nikkinen, 2012; Graham &Nikkinen, 2011; Rua&Nunes, 2009) has been done on measuring integration of stock markets in different economies, returns, prices and other economic variables (Carrieri, Errunza& Hogan 2006; Adler & Qi, 2003). It has been viewed in history that stock market development, regional and economic variables and trade openness (Blanchard &Giavazzi, 2002) helped in stock market integration (Chuah, 2005). The concept of stock market integration, which reports degree of dependence of stock markets across regional or geographic boundaries (Asgharian, Hess & Liu, 2013),emerged with the concept of Impossible Trinity in 1960s. In relation to such development, Asian stock markets brought different reforms related to liberalization of financial transactions (Mukherjee & Mishra, 2008) and modernization (Gérard, Thanyalak park& Batten, 2003) and integration. According to Arouri, Jawadi& Nguyen, 2010; Bekaert et al., 2005 and Baele et al., 2004, stock market integration helps in international risk diversification, lowering cost of capital and encouraging economic development. Similarly, extensive dependence of stock markets internationally improves investor base, enhances accuracy of public information and reduces volatility spillover (Umutlu, Akdeniz &Altag-Salih, 2010). Whereas a high level of integration reduces the benefits of international diversification aimed at lowering investment risk and produces similar risk-return relations among international stock markets (Eun& Lee, 2010a). Along with this, negative impacts of high integration also impact the policy designs of highly integrated stock markets (Berben& Jansen, 2005). Previous research showed that stock market integration can be measured based on prices and returns. For example, Chambet and Gibson (2008) reported stock market integration among 25 international emerging markets based on pricing and risk factors. Moreover, this co-movement in prices of stock was not a constant process over time, as reported by (Graham et al., 2012; Graham &Nikkinen, 2011), but increasingly moved towards globalization and market interdependency (Graham, Kiviaho, Nikkinen & Omran, 2013). There are different other studies (eg. Bekaert et al., 2005; Phylaktis & Ravazzolo, 2004; Tai, 2004; Gérard, Thanyalak park, & Batten, 2003) which showed integration of stock markets based on returns and capital asset pricing model. In Pakistan, Karachi Stock Exchange made its way towards the largest stock exchange in the country, world's best performing stock market in 2002 and stayed for three years as a world's best market on Business Week and USA Today (Sulaiman, Hussain, Jalil, & Ali, 2009). But KSE 100 Index remained out of the focus of measuring integration of returns with other Asian stock markets. Current study will treat KSE 100 index market return as a dependent variable over other Asian stock markets to reap the benefits of diversification and integration results. On the other hand, Wang (2014) mentioned, in his research, Japan as an isolated stock

market (for details see Bessler& Yang, 2003). According to this, one can infer that stock market of Japan does not move with other Asian stock markets. While Masih and Masih, 1999 and Dekker, Sen, & Young, 2001, mentioned Hong Kong stock market as the most influential stock market in Asia. However, Yang et al. (2003) reported Singapore as the leading stock market in Asia. In 2010, Huyghebaert and Wang collectively found Hong Kong and Singapore stock markets as highly integrated with each other out of Asian stock markets. But due to financial crises period of 2007 to 2008, Japan lost its leading position in the Asian stock markets. However, according to the research conducted in year 2009, Raju and Khanapuri used daily stock returns over 1998 to 2007 and found South Korea as an emerging leading market out of China, India, Thailand, Malaysia and Indonesia. Asian stock markets are in consideration for research for last few years. For example, Raj and Dhal (2008) performed time series analysis on India's largest stock market (Bombay stock Exchange) in relation to other Asian emerging stock exchanges and developed international stock exchanges. According to the results of this study, Bombay stock exchange (for the period of April 1993 to March 2003) was found weekly related to regional stock exchanges of Hong Kong, Singapore and Japan but negatively correlated with developed markets of US and UK. Similarly, Noor and Rubi (2012) reported short run integration among stock markets of Thailand, Indonesia, Malaysia and South Korea, when regressed with MSCI World Index. Furthermore, Guesmi and Nguyen (2011) applied the model of Bekaert and Harvey (1995) on emerging markets of Asia, Middle East, Southeastern Europe and Latin America and measure co-movement of stock markets over 1996 to 2008. This study reported an increasing trend of stock market co-movements irrespective of emerging stock markets. Literature on stock market integration reported presence of high- and low-level integration among Asian nascent stock markets (Huyghebaert, & Wang, 2010; Yang, Kolari& Min, 2003). In order to resolve mixed result's puzzle, we found that researchers argued at different places time varying characteristics of international stock markets as the reason (De Jong and De Roon, 2005; Awokuse, Chopra, Bessler, 2009). This study will add value in the level of integration of KSE stock market with other emerging economies of Asia. Furthermore, research also supported regional stock market integration process is much faster than international stock market integration (Bilson, Hooper & Jaugietis, 2000). However, on the contrary, Barari (2003) found global stock market integration process as faster in the period of 1988-2001 over regional stock market integration. Our attempt of measuring KSE stock market integration with other Asian (regional) countries will open research for future researchers to measure the growth of its integration on relation to emerging stock markets in the region or around the globe. Based on above-mentioned literature review and arguments, we hypothesize that KSE stock market is related to Asian stock markets of China, Singapore, India, Malaysia and Japan.

Methodology

Data Collection and Sample Size

According to the purpose of this study, we have used daily returns of five different countries (India, China, Japan, Singapore and Malaysia) from 2000 to 2012 to predict the daily returns of KSE (Pakistan) for year 2013 to 2014. Furthermore, we have compared the results of expected daily returns for KSE with actual daily returns of KSE for 2013 to 2014. Daily stock prices and indices have been extracted from Yahoo. Finance for India, China, Japan, Malaysia, Singapore and Pakistan.

Variable: Daily Returns

The study used daily returns for each country computed based on opening price and index points. To find the return daily, for each day we have taken a natural log of current day's price to yesterday's price. However, these returns are computed for the period of 2000 to 2012 for each country used in the data. Daily returns of KSE for 2000 to 2012 are taken as a dependent variable and other country's returns are taken as independent variables for the same period.

Model

In this study, we have used the model of stock market integration to predict returns in future. This model has been used by Kashif Ali in 2014. Based on the daily returns of each country, we run a regression analysis on KSE over other stock returns. Coefficients received from the regression equation gave the significance of integration of returns of other countries taken in the data with KSE returns. These coefficients are further used to find the estimated returns of KSE in the years 2013 and 2014.

$R_{KSE} = \alpha + \beta x R_{CHINA} + \beta x R_{INDIA} + \beta x R_{SINGAPORE} + \beta x R_{JAPAN} + \beta x R_{MALYSIA}$

Where,

α = Regression Constant

β = Regression Coefficient

R_{CHINA} = Daily returns of Shinghai Stock Exchange

R_{INDIA} = Daily returns of Bombay Stock Exchange

$R_{SINGAPORE}$ = Daily returns of Straits Times Index

R_{JAPAN} = Daily returns of Tokyo Stock Exchange

$R_{MALYSIA}$ = Daily returns of Kaula Lumpur Stock Exchange

To predict the normality of error computed from actual returns of KSE and Expected returns of KSE, we have drawn a histogram. Secondly, we defined a range of 0.008 to -0.008 to decide the validity of the prediction of returns based on its integration with other few countries. Based on this range, error terms falling in the range showed true prediction of returns in 2013 and 2014 coded as 0 else 1.

Results and Discussion

Descriptive study of the data is presented in table 1 given below. It shows that out of 6 countries taken in the sample for the period of 2000 to 2012, Pakistan gave the maximum mean return of 0.0007648 while Japan gave negative mean return of 0.0001851. Along with maximum mean value for return by Pakistan (KSE 100 Index), maximum variation from the mean is seen in the returns of India (as clear from standard deviation of 1.8% approximate) and less variation from the mean is seen in the returns of Malaysia (as clear from standard deviation of 1.04% approximate). Furthermore, descriptive study also shows that maximum return was 0.085 for Pakistan, 0.094 for China, 0.120 for India, 0.075 for Singapore, 0.110 for Japan and 0.158 for Malaysia.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
date	0				
pakistan	3205	.0007648	.0148605	-.0774138	.0850712
china	3330	.0001523	.015877	-.0925615	.0940079
india	3224	.00042	.0186163	-.1199364	.1205394
singapore	3284	.0000755	.0130386	-.1023887	.0753053
japan	3193	-.0001851	.0139711	-.1031881	.110522
malysia	3207	.000229	.0104446	-.153206	.1581128

Table 2 presents the correlation between each country's stock index returns with other country's stock index returns According to the correlation, independently no other country is significantly influencing the returns of stock index of other countries. Each country showed weak relations with the returns of KSE stock index. But out of these countries taken in the sample, Japan has less weak relation with KSE of 0.1014 than China which has a very weak relation of coefficient

0.0541. Rest of the countries taken in the sample have relationship of 0.0806 with India, 0.0961 with Singapore and 0.0602 with Malaysia. Nonetheless, Singapore showed a comparatively less weak relation (0.4655) with Japan as with Pakistan (0.0961).

Table 2: Correlation

	pakistan	china	india	singap~e	japan	malysia
pakistan	1.0000					
china	0.0541	1.0000				
india	0.0806	0.1424	1.0000			
singapore	0.0961	0.0593	0.3795	1.0000		
japan	0.1014	0.0677	0.2444	0.4655	1.0000	
malysia	0.0602	0.0611	0.2534	0.3634	0.2826	1.0000

Using the technique for measuring integration of KSE stock Index return with other countries in sample, value of r-square is noticed. Based on the results of following model, table 3 shows regression analysis.

$R_{KSE} = \alpha + \beta x R_{CHINA} + \beta x R_{INDIA} + \beta x R_{SINGAPORE} + \beta x R_{JAPAN} + \beta x R_{MALYSIA}$

Table 3: Regression Analysis

```
reg  pakistan china india singapore japan malysia
```

Source	SS	df	MS		
Model	.010175601	5	.00203512	Number of obs	2752
Residual	.590695498	2746	.000215111	F(5, 2746)	9.46
Total	.600871098	2751	.000218419	Prob > F	0.0000
				R-squared	0.0169
				Adj R-squared	0.0151
				Root MSE	.01467

pakistan	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
china	.0370769	.0174287	2.13	0.033	.0029023	.0712515
india	.0309284	.0166004	1.86	0.063	-.0016221	.0634789
singapore	.0505891	.0266527	1.90	0.058	-.0016722	.1028504
japan	.069494	.0231902	3.00	0.003	.024022	.1149661
malysia	.0202576	.0307077	0.66	0.510	-.039955	.0804702
_cons	.0008684	.0002798	3.10	0.002	.0003197	.0014171

The value of variation among the returns from its best-fitted line was captured very less by the model suggested above and gave the r-square value of 0.0169. This tells only 1.69% variation in KSE stock index return is explained by the returns of India, Japan, Singapore, Malaysia and China stock index returns. However, these returns significantly impacted the integration of KSE returns with those of stock indices returns taken in the sample. Japan showed most significant impact on KSE stock index return with coefficient of 0.069494 while impact of Malaysia is not significant suggesting that it can be replaced with any other country's stock market to overall increase the variation covered by the r-square in the model.

Figure 1 reports histogram of variation of actual returns of KSE stock index for year 2013 to 2014 from its expected returns calculated from the model of integration among Pakistan, China, Singapore, Japan, Malaysia and India. In this below mentioned graph, error is defined as the difference between expected returns of KSE 100 index and actual returns for 2013 and 2014. This graph shows that the return difference is not properly normally distributed but excluding few outliers, it gives the normal distribution.

Figure 1: Histogram

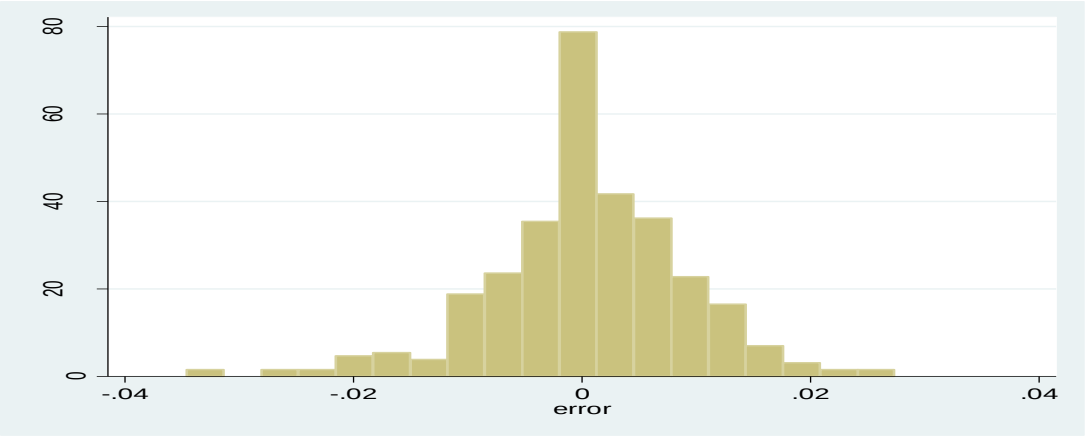


Figure 2a and 2b shows the percentage of true predictions of returns made through models of integration used in the study and percentage of wrong predictions. In the graph below, 70% of the returns showed true prediction of KSE stock returns in the year 2013 to 2014 and only 30% of prediction is wrong. This shows that our model is valid in predicting the returns of the KSE stock index. Out of 389 observations, 272 fall in the category of near to actual returns of KSE stock index returns and 117 observations fall outside the criteria of KSE stock index returns.

Figure 2a: Percentage Validation of Model

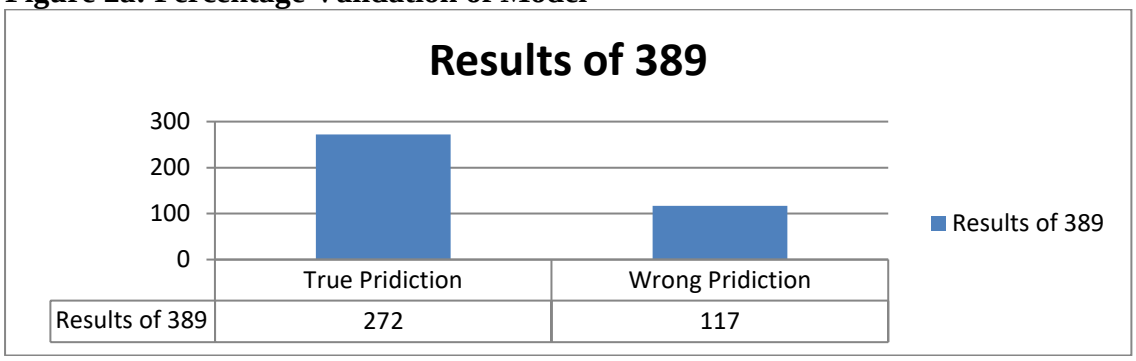
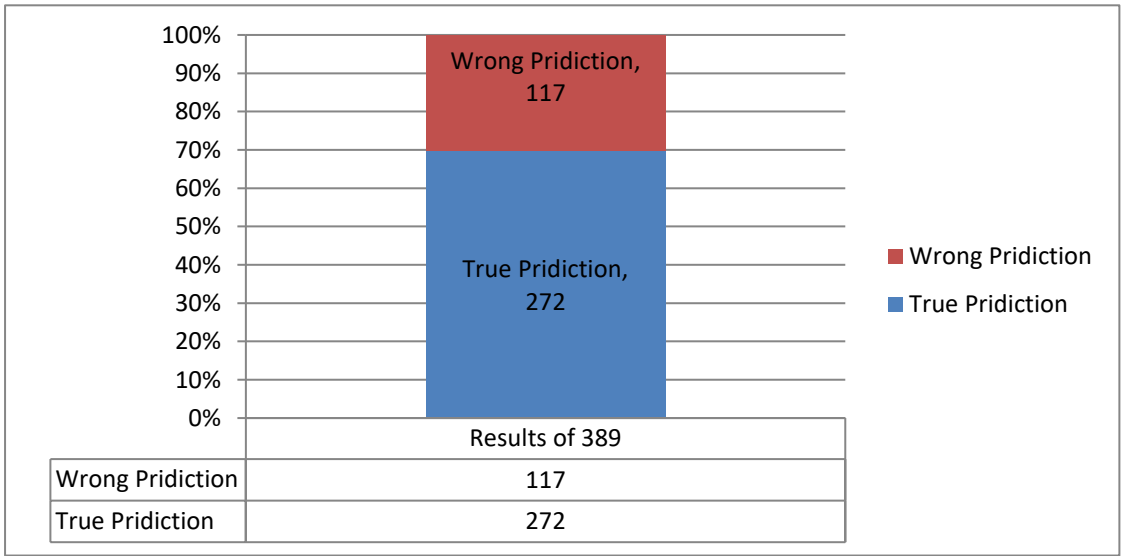


Figure 2b: Percentage Validation of Model



Discussion and Conclusion

Results of regression showed that Pakistan's largest stock index returns are not much influenced by the returns of stock markets of China, India, Singapore, Malaysia and Japan but still these countries have significant but less influence on KSE. While validation of model and significance of coefficients through regression showed that one can predict returns in future based on previous year's integration of stock market with other few markets. 70% of the results of expected returns further explained that analysts can take benefits from measuring returns for the future and earning them at present. These results were in accordance with the results of Kashif Ali's study (2014). As his study reported 72% validation of the model on the US stock market while our model reported 70% validation for KSE stock index which is quite close. On the contrary, as mentioned by Wang (2014), Japan as an isolated stock market found by Bessler and Yang (2003) still showed a significant influence on the co-movement of KSE. Lastly, investing in the stock index of these countries will help the investor to reap the benefits of diversification in the Asian markets. This study further opened research for measuring the integration of KSE stock market with other Asian markets to develop a well-diversified portfolio and found those countries in the model which explain more variation from the best fitted line of regression. This study is also open to researchers to investigate portfolio management techniques and design diversification strategies to reap more benefits of low integration.

References

Adler, M., & Qi, R. (2003). Mexico's integration into the North American capital market. *Emerging Markets Review*, *4*(2), 91-120.

Arouri, M. E. H., Jawadi, F., & Nguyen, D. K. (2010). *The Dynamics of Emerging Stock Markets*. Springer.

Asgharian, H., Hess, W., & Liu, L. (2013). A spatial analysis of international stock market linkages. *Journal of Banking & Finance*, *37*(12), 4738-4754.

Awokuse, T. O., Chopra, A., &Bessler, D. A. (2009). Structural change and international stock market interdependence: Evidence from Asian emerging markets. *Economic Modelling*, *26*(3), 549-559.

Baele, L., Ferrando, A., Hördahl, P., Krylova, E., & Monnet, C. (2004). Measuring European financial integration. *Oxford Review of Economic Policy*,*20*(4), 509-530.

Baele, L., Ferrando, A., Hordahl, P., Krylova, E., Monnet, C., (2004). "Measuring financial integration in the Euro Area". *Occasional Paper 14, European Central Bank*.

Barari, M., (2003). "Integration using time-varying integration score: the case of Latin America". *International Symposium on International Equity Market Integration, Trinity College, Dublin*, June 2003.

Beine, M., Cosma, A. Vermeulen, R., (2010). "The dark side of global integration: Increasing tail dependence". *Journal of Banking and Finance* 34, 184-192.

Bekaert, G., and C. Harvey, (1995). "Time Varying World Market Integration". *Journal of Finance*, 50(2), 403-44.

Bekaert, G., Harvey, C. R., &Lundblad, C. (2005). Does financial liberalization spur growth? *Journal of Financial Economics*, *77*(1), 3-55.

Bekaert, G., Harvey, C.R., Lundblad, C., (2005). "Does financial liberalization spur growth?" *Journal of Financial Economics* 77, 3-55.

Berben, R. P., & Jansen, W. J. (2005). Co-movement in international equity markets: A sectoral view. *Journal of International Money and Finance*, *24*(5), 832-857.

Bessler, D. A., & Yang, J. (2003). The structure of interdependence in international stock markets. *Journal of international money and finance*, *22*(2), 261-287.

Bilson, C., V. Hooper, and M. Jaugietis, (2000). "The impact of liberalization and regionalism upon capital markets in emerging Asian economies". *International Finance Review*, 1, pp. 219-255.

Blanchard, O., &Giavazzi, F. (2002). "Current account deficits in the euro area: the end of the Feldstein-Horioka puzzle?" *Brookings papers on economic activity*, *2002*(2), 147-209.

Carrieri, F., V. Errunza, and K. Hogan, (2006). "Characterizing World Market Integration Through Time", *Journal of Financial and Quantitative Analysis*.

Chambet, A., & Gibson, R. (2008). Financial integration, economic instability and trade structure in emerging markets. *Journal of International Money and Finance*, *27*(4), 654-675.

De Jong, F., De Roon, F.A., 2005. Time-varying market integration and expected returns in emerging markets. Journal of Financial Economics 78, 583–613.

Dekker, A., Sen, K., & Young, M. (2001). Equity market linkages in the Asia Pacific region: A comparison of the orthogonalized and generalized VAR approaches. Global Finance Journal, 12(1), 1−33.

Frijns, B., Tourani-Rad, A., &Indriawan, I. (2012). "Political crises and the stock market integration of emerging markets". *Journal of Banking & Finance*, *36*(3), 644-653.

Gerard, B., K. Thanyalakpark and J. Batten, (2003). "Are the East Asian markets integrated? Evidence from the ICAPM", *Journal of Economics and Business*, 55.

Gerard, B., Thanyalakpark, K., & Batten, J. A. (2003). Are the East Asian markets integrated? Evidence from the ICAPM. *Journal of Economics and Business*, *55*(5), 585-607.

Graham, M., &Nikkinen, J. (2011). Co-movement of the Finnish and international stock markets: a wavelet analysis. *The European Journal of Finance*, *17*(5-6), 409-425.

Graham, M., Kiviaho, J., &Nikkinen, J. (2012). Integration of 22 emerging stock markets: A three-dimensional analysis. *Global Finance Journal*, *23*(1), 34-47.

Graham, M., Kiviaho, J., Nikkinen, J., &Omran, M. (2013). Global and regional co-movement of the MENA stock markets. *Journal of Economics and Business*,*65*, 86-100.

Guesmi, K., & Nguyen, D. K. (2011). "How strong is the global integration of emerging market regions?" An empirical assessment. *Economic Modelling*,*28*(6), 2517-2527.

H. L. Chuah, (2005). "The integration of international equity markets". *Duke University*.

Huyghebaert, N., & Wang, L. (2010). The co-movement of stock markets in East Asia: Did the 1997–1998 Asian financial crisis really strengthen stock market integration?. *China Economic Review*, *21*(1), 98-112.

Lucey, B. M., & Zhang, Q. Y. (2010). Does cultural distance matter in international stock market comovement? Evidence from emerging economies around the world. Emerging Markets Review, 11, 62–78.

Masih, A. M., &Masih, R. (1999). Are Asian stock market fluctuations due mainly to intra-regional contagion effects? Evidence based on Asian emerging stock markets. *Pacific-Basin Finance Journal*, *7*(3), 251-282.

Masih, A.M.M., Masih, R., (2002). "Propagative causal price transmission among international stock markets: evidence from the pre- and post-globalization period". *Global Finance Journal* 13, 63-91.

Mishra, R. K., & Mukherjee, K. N. (2008). *Stock Market Integration and Efficiency: Evidence from Inter and Intra Market Relationship*. Excel Books.

Morana, C., Beltratti, A., (2008). "Co movements in international stock markets". *Journal of International Financial Markets, Institutions and Money* 18, 31-45.

Muhammad, S. D., Hussain, A., Ali, A., &Jalil, M. A. (2009). Impact of Macroeconomics Variables on Stock Prices: Empirical Evidence in Case of KSE. *Available at SSRN 1683357*.

Phylaktis, K., and F. Ravazzolo, (2004). "Stock market linkages in emerging markets: implication for international portfolio diversification", *Journal of International Markets and Institutions*, Forthcoming.

Portes, R., Rey, H., 2005. The determinants of cross-border equity flows. Journal of International Economics 65, 269–296.

Raj, J., & Dhal, S. (2008). "Integration of India's stock market with global and major regional markets". *Bank for International Settlements Press & Communications CH 4002 Basel, Switzerland*, 202.

Raju, G. A., &Khanapuri, H. R. (2009). Regional integration of emerging stock markets in Asia: implications for international investors. *The Journal of Investing*, *18*(3), 31-39.

Rua, A., &Nunes, L. C. (2009). International comovement of stock market returns: A wavelet analysis. *Journal of Empirical Finance*, *16*(4), 632-639.

Tai, C., (2004). "Market Integration and Currency Risk in Asian Emerging Markets". *Proceeding of Academy of International Business, US Southwest Chapter.*

Umutlu, M., Akdeniz, L.,Altag-Salih, A., (2010). "The degree of financial liberalization and aggregated stock-return volatility in emerging markets". *Journal of Banking and Finance,* 34, 485-696.

Westermann, F. (2004). Does the Euro affect the dynamics interactions of stock markets in Europe? Evidence from France, Germany and Italy. European Journal of Finance, 10(2), 139−148.

Yang, J., Kolari, J., & Min, I. (2003). Stock market integration and financial crisis: The case of Asia. Applied Financial Economics, 13(7), 477−486.