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A Study of Inter Linkages of Stock Exchanges of Islamic Countries and US

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Abstract

In the present era of globalization the trade is also interdependent in between the countries. The investors want to diversify the investments so that if he faces the loss from one side, he may recover it from the other side. In the case of stock exchanges, the investor wants to invest in the global stock exchange where there is no correlation among the stock exchanges. The current study attempts to study the interlinkage between the USA and Islamic countries. The study had chosen the Jakarta Stock Exchange (JKSE) from Indonesia, TASE from Israel (TA100), Kuala Lumpur Stock Exchange (KLSE) from Malaysia, Karachi Stock Exchange (KSE) from Pakistan and NYSE from USA for the purpose of the study. The closing data from 1st April 2005 to 31st Marc 2015 has been taken as the sample. For the analysis study used Auto Correlation, Unit root test, Granger Causality and Vector auto regression.

Index terms— trade, investment, interlinkage, regression.

1 Introduction of the Study

nvestment in the stocks becomes a popular choice for the investors in the recent decade. The investor wants to minimize the risk of losing the money. "To minimize this risk investor wants to invest his money in the different stock exchanges. In these days everyone wants to invest their money in shares. So the exchanges become important, which provides services for stockbroker and traders to trade, stocks, bonds, and other securities. Apart from this the stock exchanges offer a number of different facilities which includes reclamation of securities and financial instruments. "Securities traded on a stock exchange include shares issued by companies, unit trusts, derivatives, pooled investment products and bonds". A stock exchange is basically a market where you buy and sell stocks. The stock exchange works by companies buying and selling stock in their companies.

The investors want to diversify the investments so that if he faces the loss from one side, he may recover it from the other side. In the case of stock exchanges, the investor wants to invest in the global stock exchange where there is no correlation among the stock exchanges. The reason is this that if there will be a co-integration between the stock exchanges the result of increase and decline will impact all the exchanges. Elyasiani et al. (1998) supported the statement in his research and stated that the investor continuously look to invest in the markets which has no relation with each other. The same findings has been generated by Wong et al **??**2004), **??**oque (2007), Menon, Subha, Sagaran (2009) in their studies.

This study investigates the inter-linkage among the stock exchanges of USA and Islamic Countries (Indonesia, Malaysia, Israel and Pakistan). The study had chosen the Jakarta Stock Exchange (JSX) from Indonesia, TASE from Israel, Kuala Lumpur Stock Exchange from Malaysia, Karachi Stock Exchange (KSE) from Pakistan and NYSE from USA for the purpose of the study.

2 II.

3 Review of Literature

A number of researchers studied the topic of inter-linkage among the stock exchanges. The studies of **??**han et al. (1992), Chaudhuri (1997), **??**asih. Et.al (1997), Elyasiani et al. (1998), **??**an et al. (1999), **??**erchenko (2000), **??**ala and Mukand (2001), **??**harma and Wongbangpo (2002), **??**orthington et al. (2003), **??**ang et al. (2003), Hoque (2007), Menon Et. al (2009), MacDonald (2001), **??**erwa and Bohl (2003), **??**ong et al (2004), Narayan et al (2004), Chuang et al (2007) Scholars have done the studies in the different parts of the globe. **??**asih. Et.al (1997) investigates the linkage between the NSE and the stick exchanges of Taiwan, South Korea, Singapore and Hong Kong. The researchers took the closing data of these stock exchanges from January 1982 to June 1994 as the sample for the study. Elyasiani et al. (1998) study the linkage between the US market and the Asian markets includes Sri Lankan Stock Market. Verchenko (2000) & **??**ala and Mukand (2001) evaluates the inter-linkage between the USA and the Indian stock markets. Noor. **??**t.al (2006) investigates the day-of-the-week effect, month-of-the year effect and holiday effects in Australia, China, Hong Kong, Japan, India, Indonesia, Malaysia, Singapore, South Korea and Taiwan stock markets. Hoque (2007) study the impact of Indian and US markets on the stock exchange of Dhaka. **??**enon. Et.al (2009) study the relationship amongst the Indian, US and Hong-Kong market. Wong et al **??**2004) studies the long and short term relationship amongst the Indian and worlds developed countries stock exchanges. Kwan.

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Researchers used various tools to analyzed the data Wong et al (2004) used the Granger causality for the analysis. **??**ala and Mukand (2001), **??**ong et al (2004), Hoque (2007), **??**enon. Et.al (2009)) apply co integration model for the evaluation of the data.

The researchers revealed a number of facts in their respective research. Masih. Et.al (1997) revealed that there is not significant impacts of thee stock markets on each other and they operates freely. Elyasiani et al. (1998) uncovers that there if no relationship found between the US and Sri Lankan markets with the major Asian Markets. Verchenko (2000) **??**ala and Mukand (2001) finds that there is opportunities for the investors to diversify their funds in Indian and US markets as there was no co-integration found in these two markets. Noor. Et. al (2006) reveals that the existence of seasonality in stock markets and also suggested that this is a global phenomenon. Hoque **??**2007) argues in his study that the Indian and the US markets does not impacts the Dhaka Stock Exchange. **??**enon. Et.al (2009) depicts that there is no relationship amongst the Indian and the US markets. The study also reveals that the result is same in the case of Indian and Hong Kong stock market also. Wong et al **??**2004) finds that after the globalization the stock markets of the globe effect each other upto a certain extent. Kwan. **??**t.al (1995) reveals that there is a perceptible relation between the returns of Australian market and the markets of Hong Kong, Japan, Korea, Taiwan, the U.K. and the US. MacDonald (2001) finds in his research that there is a co-integration in the long term returns of US, Germany & UK. Serwa and Bohl (2003) reveals the fact that the emerging markets does not impacts the emerged markets.

The above studies that have been undertaken, a majority has studied the linkages with the stock markets in the developed world. Moreover, there is hardly any research that has studied the stock market linkages between the US and Islamic nations. The present study will attempts to find out the relationship amongst the US and the Islamic market which is a study highly called for.

5 III. Objectives of the Study

? To evaluate the inter-linkage between the USA and Islamic Countries Stock Market.

? To study the interdependency of the stock exchanges on each other.

IV.

6 Research Methodology

The current study evaluates the relationship amongst stock markets of the NYSE and Indonesia, Malaysia, Israel, and Pakistan. The study selected the one major stock market from ech country and take their indices as the closing data. Study selected the Jakarta stock exchange (JCI), TEL-Aviv stock exchange Israel (TA-100), Kuala Lumpur stock exchange (KLSE), New York stock exchange (NYSE composite) and Karachi stock exchange (KSE-100).The indices are used for stock exchanges are JCI, TA-100, FBMT 100, NYSE composite and KSE-100. All Share Index has been used for the study purpose. The daily closing levels of the five representative indices for a period beginning on 1 st April 2005 through 31 st March 2015 has been considered as the reference period. In this way, data of total 60 months are taken for the purpose of the study.

For the evaluation of the data econometrics tools has been applied. For the basic understanding of Unit root testing, we may look at the following equationy t = ?y t-1 + x t ?? + ? t ,**(1.1)**

where x t are optional exogenous repressors which may consist of constant, or a constant and trend, ? and ? are parameters to be estimated, and the ? t are assumed to be white noise. If |?| ? 1, y is a non-stationary series and the variance of y increases with time and approaches infinity. If |?|<1, y is a (trend-) stationary series. Thus, we evaluate the hypothesis of (trend-) stationary by testing whether the absolute value of |?| is strictly

less than one. The Standard Dickey-Fuller test is carried out by estimating equation (1.2) after subtracting y t-1 from both sides of the equation.?y t = ? y t-1 + x t ?? + ? t,**(1.2)**

Where ? = ? -1. The null and alternative hypotheses may be written as,H 0 :? = 0 H1 :?< 0 (1.3)

In order to make the series stationary, we take the log of the five series and arrive at the daily return of the two series.

The Granger (1969) approach to the question of whether x causes y is to see how much of the current y can be explained by past values of y and then to see whether adding lagged values of x can improve the explanation. y is said to be Granger-caused by x if x helps in the prediction of y, or equivalently if the coefficients on the lagged x 's are statistically significant.

? To suggest the investors the best stock exchanges for investment. y t = ? 0 + ? 1 y t-1 + ?? + ? l y t-l + ? 1 x t-1 + ?? + ? l x t-l + ? t x t = ? 0 + ? 1 x t-1 + ?? + ? l x t-l + ? 1 y t-1 + ?? + ? l y t-l + µ t

The reported F-statistics are the Wald statistics for the joint hypothesis:? 1 =? 2 = ???= ? t = 0 (1.5)

for each equation. The null hypothesis is that x does not Granger-cause y in the first regression and that y does not Granger-cause x in the second regression.

V.

7 Findings & Analysis

This chapter reveals the result of the analysis of the data. There is a difference in the real time data of the exchanges and a huge deviation observed in the data, thus the return has been calculated for all the indices. Fig. 1 shows the graph of the return for all the indices. The graph shows comparatively a high stationarity. The return for the indices named as RNYA for New York Stock Exchange, RTA 100 for Israel Stock Exchange, RKSE for Karachi Stock Exchange, RKLSE for Kualalampur Stock Exchange and RJKSE for Jakarta Stock Exchange.

Further table 1 reveals the results of the descriptive statistics. The KSE shows the highest mean in return which 9.04 followed by the NYS 9.01 is. The deviation shows that the data is stationary in the nature as the deviation is less than 1 in all the cases. The result of the Jarque-bera probability shows the normalcy of the data. Table **??** reveals the results of the correlation analysis up-to the lag of 36. The results indicate that there is not much effect of the previous day trading on the current day trading as the results of the correlation shows that the correlation is negligible right from lag of 2 and it continues up-to the lag of 36.

Though the results of the Group Unit root shows that the data has a unit root as the null hypothesis is accept in the test. The probability value is more than 0.05 in all the cases. Table 5 reveals the result of the vector auto regression test and it also reveal the fact that NYA regress the KSE and KLSE at the lag of 1, RTA regress KSE at lag of 2, KSE regress NYA at lag of 1, KLSE regress KSE at lag of 1. The result also shows that NYS does not regress himself from a great extent whether all the other have a high regression in case of constant.

8 Conclusion

The study reveals that there is a notable impact of the New York Stock Exchange on the other Muslim stock exchanges but there is no reverse impact of these stock exchanges on the NYA. The research also unearths that Karachi stock exchange does not impact any of the stock exchanges but get influenced from New York Stock Exchange and Kualalmpur Stock Exchange. The case os same in the case of Jakarta Stock Exchange also where the JKSE get influenced by KLSE but does not influence any of the stock exchange. The study further shows that there is no impact of the last day on the present day trading on any of the stock exchange which is a good sign for the investors. The results of the regression also shows the same results that NYA regress most of the stock exchanges on the lag of 1. Regression results further reveals that apart from NYA most of the stock exchange regress them self.

To conclude the study may suggest that these countries are good option for the investors as there is no huge relationship observed between these stock exchanges.

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Figure 1:

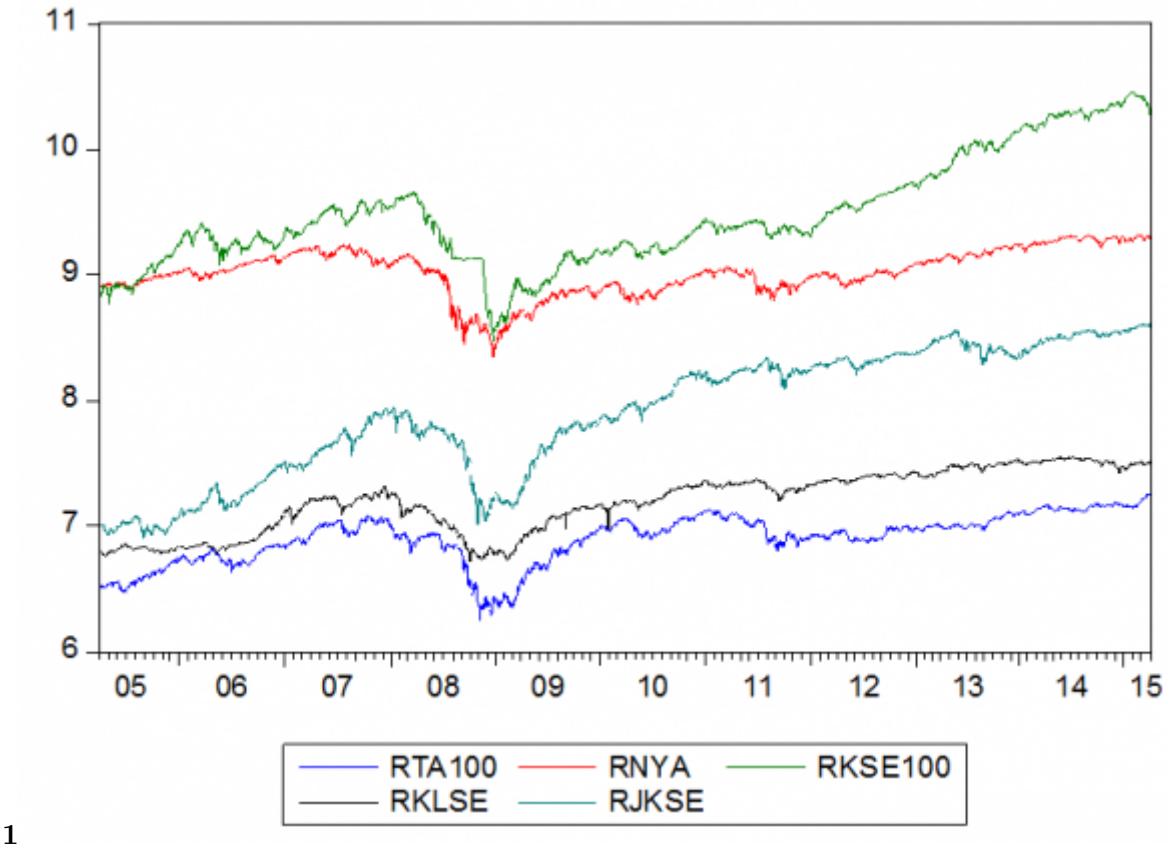

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Figure 2: Fig. 1 :CA

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	RTA100	RNYA	RKSE100	RKLSE	RJKSE
Mean	6.901240	9.018974	9.475220	7.195857	7.897663
Median	6.937829	9.021328	9.385318	7.225714	7.928352
Maximum	7.259595	9.316690	10.45813	7.545733	8.615893
Minimum	6.249454	8.349085	8.479562	6.720715	6.902512
Std. Dev.	0.196122	0.182418	0.427684	0.243967	0.501428
Skewness	-0.884215	-0.662272	0.606847	-0.362975	-0.393119
Kurtosis	3.313461	3.463789	2.736547	1.867210	1.863964
Jarque-Bera	328.8768	200.8085	157.2667	184.5667	194.6127
Probability	0.000000	0.000000	0.000000	0.000000	0.000000

Figure 3: Table 1 :

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Cross-

Figure 4: Table 3 :

Figure 5: C

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Null Hypothesis:	Obs	F-Statistic	Prob.
RNYA does not Granger Cause RTA100	2444	3.64984	0.0121
RTA100 does not Granger Cause RNYA		1.25555	0.2880
RKSE100 does not Granger Cause RTA100	2444	2.25551	0.0800
RTA100 does not Granger Cause RKSE100		1.54502	0.2008
RKLSE does not Granger Cause RTA100	2444	5.32913	0.0012
RTA100 does not Granger Cause RKLSE		0.73474	0.5312
RJKSE does not Granger Cause RTA100	2444	0.80384	0.4916
RTA100 does not Granger Cause RJKSE		3.66465	0.0119
RKSE100 does not Granger Cause RNYA	2444	1.10498	0.3458
RNYA does not Granger Cause RKSE100		3.76466	0.0104
RKLSE does not Granger Cause RNYA	2444	0.76338	0.5145
RNYA does not Granger Cause RKLSE		3.11541	0.0252
RJKSE does not Granger Cause RNYA	2444	0.33234	0.8020
RNYA does not Granger Cause RJKSE		2.01918	0.1091
RKLSE does not Granger Cause RKSE100	2444	2.69859	0.0443
RKSE100 does not Granger Cause RKLSE		0.08070	0.9705
RJKSE does not Granger Cause RKSE100	2444	0.82828	0.4782
RKSE100 does not Granger Cause RJKSE		0.14503	0.9329
RJKSE does not Granger Cause RKLSE	2444	0.06940	0.9763
RKLSE does not Granger Cause RJKSE		12.2537	6.E-08

Figure 6: Table 4 :

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	RTA100	RNYA	RKSE100	RKLSE	RJKSE
RTA100(-1)	0.999605	0.014694	-0.033653	0.010188	-0.003247
	(0.02026)	(0.02301)	(0.02150)	(0.01595)	(0.02386)
	[49.3429]	[0.63867]	[-1.56528]	[0.63858]	[-0.13611]
RTA100(-2)	-0.015211	-0.014361	0.025538	-0.015688	0.010393
	(0.02019)	(0.02293)	(0.02143)	(0.01590)	(0.02378)
	[-0.75326]	[-0.62619]	[1.19162]	[-0.98645]	[0.43705]
RNYA(-1)	0.007656	0.908917	0.006421	0.015451	-0.027733
	(0.01782)	(0.02024)	(0.01891)	(0.01404)	(0.02099)
	[0.42961]	[44.9054]	[0.33950]	[1.10084]	[-1.32141]
RNYA(-2)	-0.000384	0.081454	0.009553	-0.004270	0.016586
	(0.01795)	(0.02038)	(0.01905)	(0.01414)	(0.02114)
	[-0.02141]	[3.99585]	[0.50149]	[-0.30208]	[0.78471]

Figure 7: Table 5 :

[Hafiz Al Asad Bin Hoque ()] 'Co-movement of Bangladesh stock market with other markets'. *Managerial Finance* Hafiz Al Asad Bin Hoque (ed.) 2007. 33 (10) p. .

[Dwyer and Wallace ()] 'Cointegration and market efficiency'. G Dwyer , M Wallace . *Journal of International Money and Finance* 1992. 11 (4) p. .

[Menon et al. ()] 'Cointegration of Indian stock markets with other leading stock markets'. Rajiv ; Menon , M V Subha , S Sagaran . *Studies in Economics and Finance* 2009. 2009. 26 (2) p. .

[Chaudhuri ()] 'Cointegration, error correction and Granger causality: an application with Latin American stock markets'. K Chaudhuri . *Applied Economics Letters* 1997. 4 (8) p. .

[Masih and Masih ()] 'Dynamic modeling of stock market interdependencies: an empirical investigation of Australia and the Asian NIC's'. A M M Masih , R Masih . *Review of Pacific Basin Financial Markets and Policies* 2001. 4 (2) p. .

[Bose (2005)] *Indian, US and Asian Stock Markets Recent Trends in Interlinkages. Money and Finance*, Suchismita Bose . 2005. July-Dec 2005.

[Bhoi and Dhal ()] 'Integration of financial markets in India: an empirical evaluation'. B K Bhoi , S C Dhal . *RBI Occasional Papers* 1998. 19 (4) p. .

[Elyasiani et al. ()] 'Interdependence and dynamic linkages between stock markets of Sri Lanka and its trading partners'. E Elyasiani , P Perera , T N Puri . *Journal of Multinational Financial Management* 1998. 8 (1) p. .

[Narayan et al. ()] *Interdependence and dynamic linkages between the emerging stock markets of South Asia. Accounting and Finance*, Paresh; Russell Narayan , ; Smyth , Mohan Nandha . 2004. 44 p. .

[Chuang et al. ()] 'Interdependence of international equity variances: evidence from east Asian markets'. I.-Y Chuang , J.-R Lu , K Tswei . *Emerging Market Review* 2007. 8 (4) p. .

[Choudhry ()] 'Interdependence of stock markets: evidence from Europe during the 1920s and 1930s'. T Choudhry . *Applied Financial Economics* 1996. 6 (3) p. .

[Bodla and Turan ()] 'Interlinkage dynamics of Asian stock markets'. B S Bodla , M S Turan . *P.U. Management Review* 2006. 16 (1) p. .

[Chan et al. ()] 'International stock market efficiency and integration: a study of eighteen nations'. K C Chan , B E Gup , M.-S Pan . *Journal of Business Finance and Accounting* 1997. 24 (6) p. .

[Eun and Shim ()] 'International transmission of stock market movements'. C S Eun , S Shim . *Journal of Financial and Quantitative Analysis* 1989. 24 (2) p. .

[Hamori and Imamura ()] 'International transmission of stock prices among G7 countries: LA-VAR approach'. S Hamori , Y Imamura . *Applied Economics Letters* 2000. 7 (9) p. .

[Grubel ()] 'Internationally diversified portfolios: welfare gains and capital flows'. H Grubel . *American Economic Review* 1968. 58 p. .

[Bala and Mukund ()] 'Interrelationship between Indian and US stock markets'. A Bala , K S Mukund . *Journal of Management Research* 2001. 1 (3) p. .

[Jain and Bhanumurthy ()] 'Linkages between the US and European equity markets: further evidence from cointegration tests'. S Jain , N R Bhanumurthy . *International Journal of Business* Kanas, A. (ed.) 2005. 1998a. 2005. 12 (2) p. . (Asia-Pacific Development Journal. Issue 4)

[Mukherjee and Mishra ()] 'Stock market inter linkages: a study of Indian and world equity markets'. K N Mukherjee , R K Mishra . *Indian J. Commerce* 2005. 58 (1) p. .

[Ahlgren and Antell ()] 'Testing for cointegration between international stock prices'. N Ahlgren , J Antell . *Applied Financial Economics* 2002. 12 (12) p. .

[Macdonald ()] 'Transformation of external shocks and capital market integration'. R Macdonald . *The new capital markets in Central and Eastern Europe*, M Schroder (ed.) 2001. p. .

[Weber ()] *Volatility and causality in Asia Pacific financial markets. SFB 649 Discussion paper*, E Weber . `http://sfb649.wiwi.hu-berlin.de` 2007-004, 2007.

[Caporale et al. ()] 'Volatility transmission and financial crisis'. G M Caporale , N Pittis , N Spagnolo . *Journal of Economics and Finance* 2006. 30 (3) p. .