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INTEGRATION OF SAUDI STOCK MARKET WITH OTHER GCC STOCK MARKETS

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ABSTRACT

This study examines the integration of Saudi Stock Market with other GCC Stock Markets, because there are not many studies that have examined the integration between these markets. Hence it is felt important to understand the nature of integration between Saudi stock market and other GCC stock markets, Co-movement of Saudi stock market and other GCC stock markets, and also the impact of returns of GCC stock markets on returns of Saudi stock market. This study uses time monthly series data from Oct 2008 to Dec 2014. This study used regression analysis to test the hypothesized relationship between GCC Stock Markets and Saudi Stock Market. The test results of the model show significant relationship between returns on each GCC market and Saudi market in univariate analysis and only between Kuwaiti market and Saudi market in multivariate analysis.

INTRODUCTION

Developments in one market have impact on other market in global world, which is due to the integration of the markets [1]. Market integration is defined as the integration of a country's local financial system with international financial markets by follow similar patterns over a long period of time. [2] Moreover, some say that of markets integrate when an import tax in one of the markets is removed cause of the separate markets for the same product becomes one single market [3].

There are many effects of integration on stock markets. First of all, market integration has impact on market share and profitability of global world, but

this effect depends on the nature and degrees of association across global regions [4]. Secondly, integration of market was found to have both short run and long run positive effect on economic growth in Emerging Countries [5]. Finally, the market integration causes improvement in operating and stock performances [6].

In addition, Albasam [7] argued that the impact of the merger of markets on the Saudi stock markets, he found there are many obstacles that are avoid Saudi stock market to keep pace with global developments such as: the systems and mechanisms of implementation and control of the Saudi stock market is old. Furthermore, the financial environment of Saudi Arabia does not change and it makes its stock market not efficient.
Market Integration is one of the important factors that have affected on an international financial and the monetary system. Market integration mean many different markets (prices among different locations or related goods) are related each other by follow similar patterns over a long period of time [8]. Also, market integration is defined as the integration of a country's local financial system with international financial markets [8] Moreover, some defined integration of markets when an import tax in one of the markets is removed cause of separate markets for the same product become one single market. On other hand, some consider market integration as a strategy to unite different marketing methods such as: mass marketing, one-to-one marketing, and direct marketing.

Many studies have been conducted on the integration of markets in the global system. Massa and Schumacher [9] shown relationship between Asset management decision and market integration in USA by used a structural model of self-selection for the period 2001 to 2010. They detailed analysis of self-selection when mutual fund families decide on the management statuses of their funds. Based on this they found that there is a link between stock market integration and the organizational structure of the asset management industry. Moscalu [10] studied the impact of integration among euro area financial markets on small and medium-sized enterprises (SMEs) financing decisions. She used aggregate country level data coming from the European Central Bank' survey on SMEs' access to finance in the euro area (SAFE) and she found that a positive correlated between financial market integration on the debt ratio of euro area SMEs. However, she suggested that more attempt needed at European level to reduce the existing segmentation on the financial markets, especially with respect to lending interest rates.

Lucey and Zhang [11] examined the reasons of the important of financial integration for firms. They founded that firms look forward to be border access to finance and obtain the lower cost of capital by acting on integrated financial markets. Li, Joyeux, and Ripple [12] investigate the relationships among the North American, European and Asian natural gas markets for evidence of convergence and integration for the period 1997 to 2011. They found proof of convergence among the Japanese, Korean, Taiwanese and UK prices.

This study examines the integration of Saudi Stock Market with other GCC Stock Market. This study focuses on the impact of returns on GCC stock markets on the returns on Saudi stock market.

METHODOLOGY

Model Specification

In this study uses correlation as a test of integration between KSA stock markets and other GCC stock markets. Correlation is used as a means of integration between markets. The higher the correlation between markets, the higher the level of integration between them. In addition, the multiple regression model is employed to build a model that includes more than one independent variable to calculate and interpret the intercept and slopes of the multiple coefficients of the independent variable.
If the stock market of Saudi moves positively with other GCC stock markets, the expected value of the Saudi stock market may be a linear function of the value of GCC stock markets. So, it may be reasonable to assume that

$$RD = a + \mathrm{b1RE} + \mathrm{b2RK} + \mathrm{b3RQ} + \mathrm{b4RB} + \mathrm{b3RO}$$

Where RD= Return on Domestic market (Saudi Market), a= Intercept, RE = Return of Emirates, Market, RK= Return of Kuwait Market, RQ= Return of Qatar Market, RB= Return of Bahrain, Market, RO= Return of Oman Market. That is an equation relating the dependent variable (Saudi Market) to independent variables (GCC Markets).

Data source and measurement.

Secondary data are used for this study spanning from Oct 2008 to Dec 2014. All variables are obtained from Bloomberg Professional Database. In addition, since statistical decisions must be made under condition of uncertainty, so using hypothesis testing will improve the decision rules by control and minimize the probability of error. Finally, in this study for test the significant of impact of independent variable on the dependent variable t- Statistic is used and to assess the explanatory power of the model by R2 is used.

RESULT AND DISCUSSION

From the test results in Table 1, the following regression equation for relationship between Saudi stock market and Oman stock market is obtained: RS=0.00842 +0.57682RO+e. The equation says if the return in Oman stock market increases by 1 % the return in Saudi stock market will increase by 0.58 %. The null Hypothesis: H0: $\beta 0 = 0$ (Is rejected at 0.05 significance level). T- Statistic of the relationship between RO and RS is 5.013 and P-Value is .0000037. Because p-value is less than critical value of 0.05, the null hypothesis of 0-beta coefficient is rejected. The explanatory power of the model gives by its R2 value of 0.2587 means that the 25.87% variance in Saudi stock market is explained by return on Oman stock market. In addition, significant F-test indicates the fitness of model. Finally, the correlation between Saudi stock market and Oman stock market is strong. Because R= 0.50867.

Table 1: Regression Results of relationship between Saudi and Oman

	d.f	SS	MS	F	p-level		
Regression	1	0.08177	0.08177	25.13227	3.70466 E-06		
Residual	72	0.23425	0.00325				
Total	73	0.31602					
	Coefficient	Standard Error	LCL	UCL	t Stat	p-level	H0 (5%)
Intercept	0.00842	0.00664	-0.00481	0.0216	1.26825	0.20879	Accepted
Oman	0.57682	0.11506	0.34745	0.80619	5.01321	3.70466E-0 6	Rejected

From the test results shown in Table 2, the following regression equation for relationship between Saudi stock market and UAE stock market is obtained: RS=0.00297 +0.46341RE+e. The equation says if the return in UAE stock market increases by 1 % the return in Saudi stock market will increase by 0.46 %. The null Hypothesis: H0: $\beta 0 = 0$ (Is rejected at 0.05 significance level). T- Statistic of the relationship between RE and RS is 7.41666 and P-Value is .00000000018. Because p-value is less than critical value of 0.05, the null hypothesis of 0-beta coefficient is rejected. The explanatory power of the model gives by its R2 value of 0.4331 means that the 43.31% variance in Saudi stock market is explained by return on UEA stock market. In addition, significant F-test indicates the fitness of model. Finally, the correlation between Saudi stock market and UEA stock market is strong. Because R= 0.6581.

Table 2: Regression Results of relationship between Saudi and UAE

	d.f	SS	MS	F	p-level		
Regression	1	0.13687	0.13687	55.00685	1.87192E-10		
Residual	72	0.17915	0.00249				
Total	73	0.31602					
	Coefficient	Standard Error	LCL	UCL	t Stat	p-level	H0 (5%)
Intercept	0.00297	0.00582	-0.00863	0.01458	0.51076	0.61108	Accepted
Oman	0.46341	0.06248	0.33885	0.58797	7.41666	1.87192E-10	Rejected

From the test results in Table 3, the following regression equation for relationship between Saudi stock market and Qatar stock market is obtained: Rs= -0.00139+0.66995RQ+e. The equation says if the return in Qatar stock market increases by 1 % the return in Saudi stock market will increase by 0.67 %. The null Hypothesis: H0: $\beta 0 = 0$ (Is rejected at 0.05 significance level). T- Statistic of the relationship between RQ and RS is 9.35997 and P-Value is 0. Because pvalue is less than critical value of 0.05, the null hypothesis of 0-beta coefficient is rejected. The explanatory power of the model gives by its R2 value of 0.5489, means that the 54.89% variance in Saudi stock market is explained by return on Qatar stock market. In addition, significant F-test

indicates the fitness of model. Finally, the correlation between Saudi stock market and Qatar stock market is very strong. Because R= 0.74088.

Table 3: Regression Results of relationship between Saudi and Qatar

	d.f	SS	MS	F	p-level		
Regression	1	0.17346	0.17346	87.60911	0		
Residual	72	0.14256	0.17346				
Total	73	0.31602					
	Coefficient	Standard Error	LCL	UCL	t Stat	p-level	H0 (5%)
Intercept	-0.00139	0.00525	-0.01186	0.00907	-0.26575	0.79119	Accepted
Oman	0.66995	0.07158	0.52727	0.81264	9.35997	0	Rejected

From the test results in Table 4, the following regression equation for relationship between Saudi stock market and Kuwait stock market is obtained: Rs= 0.00472+0.97704RK+e. The equation says if the return in Kuwait stock market increases by 1 % the return in Saudi stock market will increase by 0.98 %. The null Hypothesis: H0: $\beta 0 = 0$ (Is rejected at 0.05 significance level). T- Statistic of the relationship between RK and RS is 12.60255 and P-Value is 0. Because p value is less than critical value of 0.05, the null hypothesis of 0-beta coefficient is rejected. The explanatory power of the model gives by its R2 value of 0.68807448 means that the 68.80 % variance in Saudi stock market is explained by return on Kuwait stock market. In addition, significant F-test indicates the fitness of model. Finally, the correlation between Saudi stock market and Kuwait stock market is very strong. Because R= 0.82950255.

Table 4: Regression Results of relationship between Saudi and Kuwait

	d.f	SS	MS	F	p-level		
Regression	1	0.21744	0.21744	158.82433	0		
Residual	72	0.09857	0.00137				
Total	73	0.31602					
	Coefficient	Standard Error	LCL	UCL	t Stat	p-level	H0 (5%)
Intercept	0.00472	0.0043	-0.00386	0.0133	1.09599	0.27673	Accepted
Oman	0.97704	0.07753	0.8225	1.13159	12.60255	0	Rejected

The observed relationship between Saudi market and other GCC markets as follows: The correlation between Saudi stock market and Oman stock market is strong because R= 0.50867, the correlation between Saudi stock market and UEA stock market is strong because R= 0.6581, the correlation between Saudi stock market and Qatar stock market is very strong because R= 0.74088, and the correlation between Saudi stock market and Kuwait stock market is very strong because R= 0.82950255. Based on Table 5, relationship in multiple regression only Kuwait is significant because Kuwait has the strongest correlation with Saudi markets. In addition, the Kuwait market has strong correlation with other GCC markets. Hence, return on the Kuwait market capture returns of other markets in multivariate analysis.

Table 5: Correlation between Returns on GCC markets

	SAUDI	QATAR	KUWAIT	OMAN	UEA
SAUDI	1	0.744245	0.833856	0.521676	0.667021
QATAR		1	0.817389	0.529273	0.694932
KUWAIT			1	0.667256	0.814761
OMAN				1	0.546941
UEA					1

CONCLUSION

The test results of the models of this study show significant one-to-one relationship between returns on Saudi stock market and other GCC stock markets studied. However, in multivariate analysis, only return on Kuwait market is significant in explaining return on the Saudi market. The reason for the observed results in the multivariate setting is the strongest correlation between Kuwait and Saudi markets, which is 0.83. Also, Kuwait market has stronger correlation with other GCC market than the Saudi market has. As a result, Kuwaiti market captures the effects of other markets in multivariate analysis.

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