THE EFFECT OF THE ADOPTION OF INTERNATIONAL FINANCIAL REPORTING STANDARDS ON CAPITAL MARKET INTEGRATION IN THE GULF COOPERATION COUNCIL COUNTRIES

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Abstract

This paper examines the effect of the adoption of International Financial Reporting Standards on the integration of capital market in the Gulf Cooperation Council countries. First, it uses the correlation matrix of the stock market index returns for the insurance sector from 2007 to 2013 as a proxy for the national stock market index return. Then, the causal nexus among financial variables has been investigated by employing cointegration analysis. The study finds that the adoption of IFRS by GCC stock markets has no significant impact on the integration of the capital market. Rather, the results show that the relation among these markets are mostly representing world trend toward more integration as well as the possible impact of the nature of their economy. This could be due to other institutional elements which might have some influence on the magnitude of the role of accounting standards in capital markets. Thus regulators in GCC countries should consider the interplay between accounting standards and market institutional elements in order to enhance their capital market integration.

Keywords: International Financial Reporting Standards, Integration, Capital Market, Gulf Cooperation Council Countries
JEL Classification: M41, F36

1. INTRODUCTION

It has been claimed that one of the main purposes behind the worldwide adoption of the International Financial Reporting Standards (IFRS, thereafter) is to decrease the cost of communications. Capital market participants, therefore, will have the same higher quality information with affordable cost of attaining and utilizing this information. Accordingly, one would assume that the use of one set of accounting standards will enhance capital market integration as it reduces the cost of communications and of information gathering and processing. Most companies in the Gulf Cooperation Council (GCC, thereafter) countries have adopted IFRS in preparing their financial statements, consequently increasing the possibility of the integration of their capital markets. The purpose of this research is to examine the impact of the adoption of IFRS on the integration of capital markets in the GCC countries.

Although there is an intensive research around the adoption of IFRS, the reported benefits from the adoption of IFRS are questionable as the environment where it will be employed may differ. previous studies focusing on different concerns of IFRS adoption report mixed results whether because of the differences between developed and developing countries (Gordon et al., 2012), the variance in the obstacles that may result in improper application of IFRS (Brüggemann et al., 2012), the difference in the degree of compliance with IFRS (Daske et al, (2008), or other institutional changes that occur concurrently with IFRS (Emmanuel, et al., 2016). Furthermore, there are limited studies have in particular examined the possible impact of sharing one set of accounting standards on the integration of capital markets (e.g. Dhaliwal et al., 2013 and Cai and Wong, 2010). This research should contribute to the literature from this perspective.

The integration of capital markets is defined as if assets issued in different countries have comparable correlated returns regardless of the location where they are traded (Stulz, 1981). Accordingly, capital market integration can be measured by comparing the returns of assets that are issued in different countries and generate identical cash flows.

To measure the possible effect of the adoption of IFRS on the integration of capital markets in the GCC countries, the study focuses on three capital markets, namely the stock markets of Saudi Arabia, Dubai and Qatar. It uses the matrix of the stock market index returns for the insurance sector from 2007 to 2013 as a proxy for the national stock market index returns. The focus on specific sector rather than the general stock market index is important for two reasons. First, the assets for these sectors are more identical therefore testing capital integration within this sector is more justifiable than

within the general stock market index. Second, the adoption of IFRS in Saudi Arabia occurred only in the insurance sector during the study period.

Accordingly, the sample period is divided into pre-adoption period which includes 2007 and 2008 and post-adoption period which includes 2009 to 2013. First, correlation coefficients among concerned stock markets were calculated for the two periods. Second, the causal nexus among financial variables has been investigated by employing the cointegration analysis, whereas Dickey and Fuller (1979) has been employed to investigate the existence of unit root and Ordinary Least Squares technique to examine the relation between these capital markets before and after the adoption of IFRS.

Since, there are relatively few research studies conducted in this area, the study broadens the scope by providing empirical evidence of the relation between IFRS adoption and capital market integration. The results of this study are also important to the regulators in this region as their capital markets are suffering from thin trading, lack of liquidity and lack of informational efficiency (Simpson, 2008) so one remedy for these problems is to increase the integration among their capital markets.

The study finds that the adoption of IFRS has no significant impact on the integration of the capital market in the GCC countries. Moreover, the results of the cointegration tests show that many of these markets do not maintain a long-term relation between them. It is evident that their degree of integration is lower than discussed in the literature particularly based on the developed countries. The possible explanation of these results is that other institutional elements might have some influence on the magnitude of the role of accounting standards on the integration of capital markets and regulators need more actions to establish more integrated capital markets. This could support the argument that the possible attributes of IFRS adoption may not be achieved per se but other institutional changes should occur concurrently with IFRS to observe its benefits (Emmanuel, et al., 2016).

The paper is structured as follows. Next two sections provide a review of the literature and a discussion of the context of stock markets in the GCC countries. Sections 4, 5 and 6 discuss the research hypothesis and research methodology. Sections 7-9 discuss the results whereas section 10 concludes.

2. THE REVIEW OF THE LITERATURE

There is a continuing debate in the accounting literature around the observed benefits of the worldwide adoption of IFRS. Significant part of this literature examines the net benefits of the adoption of IFRS on capital market outcomes and argues that IFRS adoption enhance reporting quality, transparency and information contents and improve the comparability of financial statements and information efficiency across countries. However, these assertions have been contested by other studies arguing that the desirable outcomes are questionable as the environment where it will be employed may differ.

The most relevant studies to the concerns of this study are those investigating the impact of the adoption of IFRS on capital market integration. Unfortunately, this issue has received little research in comparison to issues relating to the possible impacts of IFRS adoption on international capital markets, international comparability of financial statements and inflow of foreign investments.

From the perspective of the possible impact of IFRS adoption on the capital market integration, Dhaliwal et al. (2013) provide initial evidence on the role of IFRS on financial market integration. They focus on the mandatory adoption of IFRS and find a positive association between IFRS adoption and market integration measured based on two dimensions; the extent to which the global factors can explain local stock returns and the speed with which local stock returns incorporate global factors. They conclude that the relation between IFRS adoption and financial integration is obvious where there is a significant difference in quality between IFRS and local accounting standards and stronger legal enforcement. Cai and Wong (2010) examine the effects of IFRS adoption on the integration of global capital markets. They report that countries that have adopted IFRS as their accounting standards for listed companies are more financially integrated compared to those using local accounting standards.

Larger type of research concerns the association between the movement toward IFRS and cross border investments and inflow of foreign investments. From this vein, research reports that reporting under IFRS is less costly for investors to compare firms across markets and countries (Armstrong et al., 2010 and Gnanarajah, 2015), facilitates cross-border investments (Bradshaw et al., 2004 and Aggarwal et al., 2005). This would encourage foreign investments to flow into countries and in turn improve the liquidity of the capital market, risk-sharing and lower the cost of capital (Merton, 1987).

Empirically, DeFond et al. (2011) examine whether the mandatory adoption of IFRS in the European Union (EU) in 2005 is associated with an improvement in financial statement comparability. They report an increase in the ownership of foreign mutual following mandatory IFRS adoption only in countries with strong implementation credibility. More recently, Francis et al. (2016) report an increase in volume of cross-border transactions between countries with similar accounting standards.

Daske et al. (2008) provide explanation to this by stating that decision makers in different capital markets will have the same higher quality information with affordable cost of attaining and utilizing this information. This is supported by Tweedie and Seidenstein (2005) who argue that setting a global accounting standards which are consistent, comprehensive, and based on clear principles would help in proper and effective functioning of international capital markets.

Other research has focused on the impact of investment-related information produced by IFRS across-countries. For example, based on a sample of over 1,000 IFRS-adopting firms in European countries, Chen et al. (2013) report more sensitivity of a firm's investment efficiency to performance-related information suggesting that comparability is critical for the observed outcomes. In larger scale,

Loureiro and Taboada (2015) report based on a study of over 32,000 firms from 50 countries that IFRS adopters experience an increase sensitivity in investment-to-price relation. By focusing on merger and acquisition, Louis and Urcan (2014) also investigate how IFRS adoption affects decisions pertaining to merger and acquisition and argue that widespread IFRS adoption should increase cross-border acquisitions.

Theoretically, this has been explained by Emmanuel et al. (2016) stating that firms' commitments to transparency will be increased under IFRS which will reduce the information asymmetry consequently increase investors' willingness to trade, by this means stock prices will be informative. They further report three reasons behind preference of IFRS; first foreign investors may concern IFRS adoption because IFRS will replace unfamiliar country-specific reporting standards which will reduce their cost of information processing, second the general perception that IFRS is of a higher quality than many local GAAP and third the use of one set of accounting standards would be better in increasing the visibility of remote investments. Tarca (2012) and Emmanuel et al., (2016) provide a review of arguments and evidence from research investigating the adoption of IFRS globally.

It is obvious that these findings demonstrate that IFRS is more relevant to global capital markets and investors than other local accounting standards, however, the desirable outcomes are not always achievable as the environment where it will be employed may differ. This has been evident by several research studies. For example, research studies reveal that the case may be different from developed to developing countries. It has shown that in developed countries with high quality local accounting standards, the possible effects might be minor because it is more likely to have local accounting standards that are more relevant to their environment than IFRS while in developing countries it is more likely that the adoption of IFRS will improve the quality of accounting information. This is evident in the results of the study of Gordon et al. (2012) which report, on a study of firms from 124 countries during the period 1996-2009, an increase in developing countries adopting IFRS with no observed direct benefits for developed countries.

There is also a critical challenge relating to compliance and proper application of IFRS such as regulations, compliance, enforcement and education. Brüggemann et al. (2012) discuss finding of empirical studies on the economic consequences of mandatory adoption of IFRS in the European Union (EU). They give specific consideration to those research studies investigating the effects of IFRS on the capital market, where they classify these research studies into two categories: studies directly analyzing economic consequences in capital markets using measures associated with firms' values and studies indirectly measuring capital-market perceptions of accounting quality. Brüggemann et al. (2012) conclude that the financial reporting effect is limited because of substantial non compliance and accounting choices at the national levels that remain unchanged. They argue that there is unanimous evidence that the mandatory adoption of the IFRS coincides with capital-market and macroeconomic benefits.

This has been shown by Jayaraman and Verdi (2014) whom provide empirical findings from this perspective by investigating the interaction between reporting incentives and accounting standards. They investigated a sample of 15 European Union (EU) countries based on two regulatory changes the adoption of the common euro currency and IFRS adoption. They found greater financial reporting convergence after IFRS adoption but only in euro countries. They further conclude that the convergence in reporting incentives and the convergence in accounting standards act as complements suggesting that this is driven by capital market integration via arms-length rather than product market integration.

Daske et al. (2008) also provide explanation for the problem of un-achieving the expected outcomes after the adoption of the IFRS. They reveal that when there is striker enforcement and better reporting incentives firms would comply with IFRS in more rigorous manner. Daske et al. (2008) further suggest that if the local accounting standards are in lower quality in comparison to IFRS, the possibility of realizing benefits of the adoption of IFRS is higher.

Emmanuel et al. (2016) provide a general view of the studies investigating the benefits of the adoption of IFRS. They argue that even there is strong evidence about the benefits of the adoption of IFRS; there is no agreement whether the observed outcomes are attributable to IFRS adoption or to other institutional changes that occur concurrently with IFRS. Earlier, IFAC (2004) has raised wariness about conditions to observe the outcomes of the adoption of IFRS. It reports that a financial reporting system should be supported by strong governance, high quality standards, sound regulatory frameworks for realizing the benefits of economic development and benefitting from a global financial reporting framework such as comparability of financial information for investors, greater willingness on the part of investors to invest across borders, lower cost of capital and more efficient allocation of resources. It admits that there are several challenges for these benefits to be realized such as issues of incentives, culture, scale, understandability, translation and education.

3. THE INTEGRATION OF CAPITAL MARKETS IN GCC COUNTRIES

The Gulf Cooperation Council (GCC) was established in 1981 and is composed of six Arabian countries namely, Saudi Arabia, United Arab Emirates, Qatar, Kuwait, Oman and Bahrain. One of the main objectives of the GCC countries is to accomplish economic and financial integration among each other (Secretariat General of GCC, 2014). For this purpose, GCC countries initiated in 1981 economic nationality under the article 8 which states the realization of a fully equal treatment among GCC nationals in all economic fields. This treaty includes: freedom of movement, work and residence, the right of ownership, inheritance and will, the freedom of engagement in economic activity and free movement of capitals. Later, this has been expanded to include most important provisions concerning the economic nationality whereas the same treatment accorded to

its nationals without differentiation or discrimination in all economic fields (Secretariat General of GCC, 2015).

Nevertheless, in GCC countries there are several differences in regulations, institutional elements and developments of their capital markets which could cause some obstacles for integrating their economics and stock markets (Mohd and Hassan, 2003). Also, Shachmurove (2003) names number of differences such as liquidity, infrequency of days of trading stocks, lagging of domestic and political reforms, government interference and inflexible monetary policies. He further argues that these present challenges for GCC markets to achieve globalization and benefit from foreign direct investments.

One important element relates to the domination of commercial banks in the financial systems which could limit the importance of cross-border equity flow among GCC countries (Espinoza, et. al., 2010). Also, GCC stock markets differ in their regulations and developments. Some of these markets achieved solid progress in their expansion, reforms and openness and others need more reforms, transparency and governance (Simpson, 2008). Rao and Shankariah (2003) report that these markets are neither developed nor informational efficient and suggest that these countries have to develop strategies based on the experience of developed markets. Table 1 presents some key indicators about stock markets in the GCC countries as of September, 2013.

Table 1. Indicators of GCC stock markets in US $

	Saudi Arabia	Qatar	Abu Dhabi	Dubai	Oman	Kuwait	Bahrain
EPS	17.40	14.00	12.00	15.20	11.80	18.30	8.80
ROE	12.30	13.60	12.70	8.70	13.80	7.20	12.10
ROA	4.50	9.90	8.20	3.40	6.40	2.40	4.70
Earning	98.20	40.69	31.34	13.58	6.85	18.12	5.94
Dividend Yield:	3.20	3.80	4.4	3	4.1	2.70	0.4
Market value (M.)	1,680.00	569.59	83.31	65.96	80.77	373.72	52.29

The results of the studies investigating capital market integration in the GCC countries are mixed. From one side, Mohd and Hassan (2003) utilized multivariate cointegration techniques to examine the existence of long-term relations between share prices in the gulf region. They find that prices are moving along the trend values of each other in the long-terms changes then argue that there is a long-term equilibrium relationship between Oman, Bahrain and Kuwait. Al-khazali et al. (2006) examine the intra regional integration of Saudi Arabia, Kuwait, Bahrain and Oman. They report a common stochastic trend over the long run among these countries. Onour (2009) reports on a study investigating relation between GCC stock markets returns. He finds some non-linear cointegration relationship linking some stock markets with each other. More recently, Sadouni (2013) investigates the stock market integration of Kuwait, Saudi Arabia, Bahrain and Qatar and finds substantial integration among these markets.

Different results have been reported by number of studies. For example, Abraham et al. (2001) examine the integration among Saudi Arabia, Kuwait and Bahrain and report a low correlation among these capital markets. Espinoza et al. (2010) compare GCC stock markets with other emerging market in the region and emphasize that GCC stock markets are fairly integrated because of market illiquidity.

Regardless of these mixed results, some degree of integration is expected because of two reasons. The first reason is pertaining to the recent developments of these stock markets which could lead to more integration with international stock markets and among each other. Choudhry et al. (2007) and Masih and Mansur (2002) investigate the integration of worldwide stock market and argue that the development of financial markets would improve the degree of integration among international markets. So it could be seen that the integration of GCC stock markets is part of the global trend of developments in capital markets (Espinoza et al., 2010) resulting from international stock markets becoming more integrated and equity prices exhibiting long-run relationships (Swanson, 1987).

With some degree of differences, these stock markets have observed considerable changes during the last few years such as escalating privatization programs, issuance of new shares, lunching of computer-based trading, the inter-listing of shares on their stock markets and improving informational environments (Deutsche Bank, 2012). Table 2 provides some outline of the recent developments in the selected stock markets.

The second reason is pertaining to the nature of their economies. The GCC economy is an oil-based economy while oil and gas sector represents approximately 73% of total export, about 63% of government's revenue and 41% of its GDP in 2013 (Gulfbase, 2013) which could explain some degree of their economic and financial integration. This is also suggested also by Mohd and Hassan (2003) arguing that the stock market integration of GCC countries might in fact be representing the correlation between share prices and oil prices. Similarly, Alkulaib et al. (2009) find that the GCC region has more interaction and linkage than other regions in the MENA region due to the similarity of the nature of their economies.

Table 2. Outline of the recent developments in the examined stock markets

	Saudi Arabia	Dubai	Qatar
Establishment of independent regulatory bodies to govern their capital markets	In 2003 Saudi Capital Market Authority	In 2000 UAE Securities and Commodities Authority	In 2007 Qatar Financial Market Authority
Regulation governing foreign participation	Foreigners are allowed to buy shares listed on the KSA bourse by entering into swap agreements with authorized persons. And ETFs.	Foreigners are permitted to buy, own and trade in UAE companies' stock.	Foreigners are permitted to buy, own and trade Qatari companies' stock
Regulation governing GCC citizens participation in the market	GCC Citizens are permitted to buy, own and trade Saudi companies' stock	GCC Citizens are permitted to buy, own and trade UAE companies' stock	GCC Citizens are permitted to buy, own and trade Qatari companies' stock.
Listing of securities of foreign companies	No	2002	No
Electronic trading	Since 1990	Since 1990	Sine 2001
Corporate governance Regulations	In 2006	In 2009	In 2009
Accounting Standards	IFRS for Banks (since the inception) , Insurance sector since 2009 and Local Accounting Standards for Other companies	IFRS For all Companies (since the inception)	IFRS For all Companies (since the inception)

4. THE RESEARCH HYPOTHESIS

The study questions whether the adoption of IFRS by Saudi companies in 2009 would bring Saudi stock market toward more integration with other stock markets in Gulf States, namely Qatar, and Dubai stock markets.

Previous research has reported that the adoption of IFRS by companies in different countries enhances the availability of similar quality financial information to investors and enhances the integration of capital market (Cai and Wong, 2010). Thus, the adoption of the International Financial Reporting Standards (IFRS) by companies in GCC countries is proposed to increase the integration between these stock markets as decreasing the cost of communications and of information gathering and processing could enhance capital market integration (Mussa and Goldstein, 1993).

Stulz (1981) defines the integration of capital market as if assets with perfectly correlated returns have the same price, regardless of the location in which they trade. Previous studies have measured financial integration using number of indicators such as gross capital flows, stocks of foreign assets and liabilities, degree of co-movement of stock returns, and financial openness. For this study an indicator of more integration among stock markets is the closeness of the trend of the market indices. Therefore, if the indices of two stock markets are moving in the same direction and degree, they are considered more integrated. Accordingly, capital market integration can be measured by comparing the returns of assets that are issued in different countries and generate identical cash flows. Accordingly, the research hypotheses are stated as follow:

H1: Pre-adoption of IFRS by Saudi companies, the rate of return of Saudi stock index is not significantly correlated with the rate of returns of stock indices in other GCC countries that are adopting IFRS

H2: After-adoption of IFRS by Saudi companies, the rate of return of Saudi stock index is becoming significantly correlated with the rate of returns of stock indices in other GCC countries that are adopting IFRS

Since some degrees of integration between these markets are expected due to two main reasons. The first is pertaining to the global trend toward more integration among world stock markets while the second reason is representing the correlation between share prices and oil prices. Therefore, two further hypotheses are developed to test these assumptions.

H3: Regardless of the adoption of IFRS by Saudi companies, the rate of returns of GCC stock indices are significantly correlated with the rate of returns of stock indices in the international leading stock markets.

H4: Regardless of the adoption of IFRS by Saudi companies, the rate of returns of GCC stock indices are significantly correlated with the rate of return of oil prices.

5. RESEARCH METHODOLOGY

Generally speaking, there are two common methods to investigate financial markets integration. The first approach called the international capital asset pricing model (ICAPM) while the second model is the cointegration approach. The ICAPM demonstrates that integration is achieved when two securities with same risk characteristics in tow different markets have the same price levels. While cointegration analysis tells us about the long-term relationship among equity prices of selected markets. The cointegration approach is the most popular method used to test the extent of integration between financial markets (Sadouni, 2013).

At the beginning, the study runs a correlation matrix for the stock market index returns for the insurance sector from 2007 to 2013 as a proxy for the national stock market index returns. If two stock markets are highly integrated, the correlation coefficient between these two markets will be high which indicates that the stock prices of these two markets tend to move in the same direction. Measuring the degree of the integration among stock markets indices through correlation has been widely

adopted in the finance literature, (e.g., Heston and Rouwenhorst, 1994, Bekaert and Harvey, 1995, Chambet and Gibson, 2008, Eiling and Gerard, 2007 and Cai and Wong, 2010).

After that, the causal nexus among financial variables has been investigated by employing the cointegration analysis for the stock market index returns for the insurance sector from 2007 to 2013 as a proxy for the national stock market index returns. Cointegration tests involve two steps. In the first step, each time series is scrutinized to determine its order of integration. To meet this requirement, unit root tests designed by Dickey and Fuller (1979) have been employed. In the second step, the time series is analyzed for cointegration.

6. THE DATA

The focus was directed toward Saudi Arabia, Dubai and Qatar markets because the data for these markets were available. Oman Stock market was excluded because its insurance sector includes different types of companies so its insurance sector is not identical to that of other Gulf States. Kuwait, Abu Dhabi and Bahrain were excluded because of non-availability for some years. Therefore, data representing the monthly index level have been obtained from Gulfbase for Saudi Arabia, Dubai and Qatar stock markets.

The reason behind the use of the stock market index returns for the insurance sector instead of the general index is that insurance companies in Saudi Arabia have moved from applying local standards in 2009 to IFRS, while insurance companies in the rest of the gulf countries have been utilizing IFRS for the whole period of interest. So it was possible to divided the sample period into pre-adoption period which includes 2007 and 2008 and post-adoption period which includes 2009 to 2013. Another reason is that the assets for these sectors are more identical therefore testing capital integration within this sector is more justifiable. Samuelson (1998) argues that testing international market activities works better when individual sectors are concerned rather than the general stock market index.

Since the monthly index level for each market included in the study was denominated in the respective local currency, each index return was converted into US dollars to ensure consistency in the measurement of the study. The rate of return for each stock market was calculated as follows:

$$Rit = \ln(Pit/ Pit\text{-}1) \quad (1)$$

where, Rit : Rate of return of country i's stock index for insurance sector at t;

Pit: Price of country it's stock index for insurance sector at t.

7. DESCRIPTIVE ANALYSIS

Table 3 presents a summary of some important indicators of the insurance sector of the three markets at the end of October, 2013. In total, they consist of around 21% of all the companies listed in the three markets. Saudi stock market is listing 35 insurance companies and has the largest number, while Qatar Stock markets lists 5 insurance companies and has the smallest number of companies working in the insurance services.

Table 3. Number of Insurance Companies at each Market

	Market index	Number of Insurance Companies	Total Number of Companies at the Market	%
Saudi Arabia	TASI.INS	35	162	0.22
Qatar	QE.INS	5	42	0.12
Dubai	DFM.INS	13	61	0.21
Total		70	331	0.21

The monthly returns of the insurance sectors during the whole period of study are presented in table 4. The insurance sector in Qatar stock market recorded the highest mean (0.006), while insurance sector in Dubai stock market recorded the smallest and negative mean (-0.0004). The highest standard deviation of (.006173993) has been reported for Saudi stock market with a minimum rate of return of (-.024935) and a maximum rate of return of (.019410) among all the stock markets. This indicates that during the period of 2007 to 2013, insurance sector in Saudi stock market had the highest volatility of rate of return compared to insurance sectors in the two Gulf States considered in this study.

Table 4. Descriptive Statistics of monthly returns of insurance sectors Indices during 2007-2013

	Minimum	Maximum	Mean	Std. Deviation
Saudi Index	$-.024935	$.019410	$.00007027	$.006173993
Qatar Index	$-.022439	$.010799	$.00058743	$.004177998
Dubai Index	$-.006602	$.007512	$-.00039745	$.002463079

8. DISCUSSION OF THE CORRELATION RESULTS

The objective of this research is to investigate whether the adoption of the International Financial Reporting Standards (IFRS) by companies in GCC states would enhance the integration of capital markets in these countries. To gain an insight a matrix for rate of returns of insurance sectors during pre and post adoption periods of IFRS are computed in table 5.The results show no significant correlation among GCC stock markets whether before or after the adoption of IFRS. Instead, the results show general and consistent correlation with the leading international stock markets (S& P 500 and FTSE 100 stock markets). Also Pearson correlation reports a moderate correlation between some of the GCC stock markets and the change in oil prices.

To illustrate, before the adoption of IFRS (2007-2008) the highest correlation coefficient reported is

between Qatar stock market and Dubai stock market at .607, which is significant at .01 level. The correlation coefficient between Saudi stock market with Qatar and Dubai stock markets are moderate at about 0.43 and 0.15, respectively. In the post-adoption period of IFRS (2009-2013), the test of correlation shows no significant change of correlation between these stock markets. It keeps almost the same degree of correlation among Saudi, Qatar and Dubai stock markets during the two periods, indicating that the impact of the adoption of IFRS by GCC states may have little in enhancing the integration among the GCC stock markets. This does not support the main research hypothesis that proposes that after the adoption of IFRS by Saudi companies, the rate of return of Saudi stock index is becoming significantly correlated with the rate of returns of stock index in other GCC states that are adopting IFRS.

In the other side, the results in general show consistent correlation with the leading international stock markets. As shown in table 5 all GCC stock market correlate to some extent with the S& P 500 and FTSE 100 stock markets. For Qatar stock market, Pearson correlation reports significant correlation at 1% with these two international markets. The other GCC stock markets also keep sufficient correlation at 5% and 10% with these two international markets. This could be representing the global trend toward more integration among world stock markets (Swanson, 1987), which supports the third research hypothesis which states that the rate of return of GCC stock indices are significantly correlated with the rate of returns of stock indices in the international leading stock markets regardless of the accounting standards adopted. Also, Pearson correlation reports a moderate correlation between some of the GCC stock markets and the change in oil prices. Saudi stock market is the one who is correlating with the change in oil prices whether before or after the adoption of IFRS at 5%. Other GCC stock markets are also correlating with the change in oil price however at lower degree. To some extent, this partly supports the fourth research hypothesis which states that the rate of return of GCC stock indices are significantly correlated with the rate of return of oil prices.

In general, the findings suggest that although there are some degrees of correlation among GCC stock markets, this nature of correlation is more likely representing the global trend toward more integration of world stock markets as well as the reliance of their economies on oil revenue. Similar results have been reported by Abraham et al (2001) reporting a low correlation among these capital markets and Espinoza et al. (2010) asserting that GCC stock markets are fairly integrated because of market illiquidity.

From the other perspective, the results show some possible impact of change of oil prices on the stock markets in the region. This is expected as oil revenue has always been a driving force to the activities of stock markets in the GCC countries as most of these economies are oil dependent, and are heavily investing in petrochemical industries. Similar results have been reported by Alkulaib et al. (2009) arguing that the GCC region has more interaction and linkage than the MENA region due to the similar economic nature of these countries and Mohd and Hassan (2003) reporting the importance of oil price change in the activities of stock markets in the GCC region.

Table 5. Correlations of Rate of Returns pre and post adoption of IFRS

	S_P_500		DFM_INS		OIL_PRICE		QE_INS		TASI_INS		FTSE_100	
	Pre IFRS	Post - IFRS	Pre IFRS	Post - IFRS	Pre IFRS	Post - IFRS	Pre IFRS	Post - IFRS	Pre IFRS	Post - IFRS	Pre IFRS	Post - IFRS
S_P_500	1.0000	1.0000										
	-----	-----										
Prob.	-----	-----										
DFM_INS	0.3781	0.3275	1.0000	1.0000								
	1.9158	2.6399	-----	-----								
Prob.	0.0685	0.0106	-----	-----								
OIL_PRICE	0.8923	0.2257	0.4863	0.1386	1.0000	1.0000						
	15.0495	1.7645	2.6103	1.0659	-----	-----						
	0.0000	0.0829	0.0160	0.2909	-----	-----						
QE_INS	0.7093	0.4768	0.6070	0.3074	0.5569	0.1533	1.0000	1.0000				
	4.7190	4.1309	3.5823	2.4601	3.1452	1.1817	-----	-----				
Prob.	0.0001	0.0001	0.0017	0.0169	0.0047	0.2421	-----	-----				
TASI_INS	0.4489	0.3132	0.1470	0.2681	0.4745	0.2960	0.4339	0.2211	1.0000	1.0000		
	2.3566	2.5114	0.6969	2.1197	2.5283	2.3602	2.2591	1.7269	-----	-----		
Prob.	0.0278	0.0148	0.4932	0.0383	0.0191	0.0217	0.0341	0.0895	-----	-----		
FTSE_100	0.8568	0.8923	0.3079	0.3666	0.5935	0.2871	0.5827	0.5179	0.4532	0.2591	1.0000	1.0000
	7.7924	15.0495	1.5181	3.0012	3.4592	2.2827	3.3633	4.6113	2.3845	2.0431	-----	-----
Prob.	0.0000	0.0000	0.1432	0.0040	0.0022	0.0261	0.0028	0.0000	0.0262	0.0456	-----	-----

9. DISCUSSION OF THE COINTEGRATION RESULTS

Cointegration analysis tells us about the long-term relation among equity prices of selected GCC states. It involves two steps. In the first step, each time series is scrutinized to determine its order of integration. To meet this requirement, unit root tests designed by Dickey and Fuller (1979) have been employed. In the second step, the time series is analyzed for cointegration.

In order to make sure that the results are not spurious, Dickey-Fuller and Augmented Dickey-Fuller test have been utilized to investigate the existence of unit root. The existence of unit root causes the regression results to be spurious. One common technique to solve this problem if it is existed is to take first difference of the variables and then test again if it has become stationary. However, after applying this method it has been found that the hypothesis of unit root is rejected for all these thee series as we can see from the results in table 6. So the prices in all the three markets are stationary.

Table 6. ADF Test Results Pre- Adoption of IFRS and Post- Adoption of IFRS

		TASI_INS		DFM_INS		QE_INS	
With Constant	**t-Statistic**	**Before IFRS**	**After IFRS**	**Before IFRS**	**After IFRS**	**Before IFRS**	**After IFRS**
		-3.7436	-6.1416	-4.7381	-7.3828	-3.7815	-7.0613
	Prob.	0.0102	0.0000	0.0011	0.0000	0.0094	0.0000
		**	***	***	***	***	***
With Constant & Trend	**t-Statistic**	-4.0185	-6.2537	-5.1602	-7.3232	-3.9783	-7.0570
	Prob.	0.0236	0.0000	0.0020	0.0000	0.0247	0.0000
		**	***	***	***	**	***
Without Constant & Trend	**t-Statistic**	-3.7479	-6.0160	-4.7394	-7.3711	-3.8687	-6.5405
	Prob.	0.0007	0.0000	0.0000	0.0000	0.0005	0.0000
		***	***	***	***	***	***

*Note: *** significant at 1% level; ** significant at 5% level*

After it has been shown that the data is stationary, a test was carried out to examine the concern that there is no higher integration level in these markets after IFRS has been implemented. For this purpose, Ordinary Least Squares technique has been utilized to find the relation between different markets before and after the adoption of IFRS. So, we do first the regression of each GCC stock market against other GCC stock markets then with the international stock markets and with the oil price change separately for each period; before and after IFRS adoption.

The results in table 7 show that there is no relation of Saudi Stock market with each of Qatar and Dubai. All the coefficients are small and have small t-value suggesting that the coefficients are statistically insignificant. Also it shows that even there are some relations between Qatar and Dubai stock markets, this relations is neither sufficient after IFRS adoption period (0.06) nor consistent.

Further, the results of the regression of each GCC stock market against the S& P 500 and FTSE 100 stock markets show some association between selected GCC stock returns and that of the leading international stock markets suggesting some influence of these international stock markets on GCC stock markets.

To examine the possible improvement of the integration after the adoption of IFRS, a comparison of the results of the regression for each market before and after IFRS adoption using the dependent sample t-test was utilized. Hypothesis test involves paired observations when the samples are dependent. Dependent sample is characterized by a measurement followed by an intervention of some kind and then another measurement. This could be applied to the case of a "before" and "after" study. The standard formula for paired t value is given as:

$$t = \frac{\bar{d}}{s_d/\sqrt{n}} \quad (2)$$

Table 7. Cointegration Results of Saudi Market with the other GCC Markets Pre- Adoption of IFRS and Post- Adoption of IFRS

Dependent Variable: TASI_INS											
	Before IFRS					**After IFRS**					
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**	**R-squared**	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**	**R-squared**	**R-squared diff.**
DFM_INS	0.403358	0.578811	0.696873	0.4932	0.021597	0.584952	0.275958	2.119713	0.0383	0.071899	-0.18159
FTSE_100	0.083095	0.034848	2.384477	0.0262	0.205367	0.027767	0.013590	2.043140	0.0456	0.067140	0.055328
OIL_PRICE	0.035632	0.014094	2.528256	0.0191	0.225136	0.018379	0.007787	2.360151	0.0217	0.087624	0.017253
QE_INS	0.606124	0.268304	2.259092	0.0341	0.188297	0.348618	0.201879	1.726865	0.0895	0.048901	0.257506
S_P_500	0.079564	0.033763	2.356554	0.0278	0.201549	0.030479	0.012136	2.511431	0.0148	0.098080	0.049085
SD											0.107509
t-stat											0.821882
Dependent Variable: DFM_INS											
FTSE_100	0.020572	0.013551	1.518081	0.1432	0.094820	0.018010	0.006001	3.001246	0.0040	0.134425	0.020572
OIL_PRICE	0.013305	0.005097	2.610263	0.0160	0.236468	0.003945	0.003701	1.065887	0.2909	0.019212	0.013305
QE_INS	0.308901	0.086230	3.582311	0.0017	0.368414	0.222140	0.090295	2.460143	0.0169	0.094490	0.308901
S_P_500	0.024416	0.012744	1.915841	0.0685	0.142983	0.014611	0.005535	2.639930	0.0106	0.107270	0.024416
TASI_INS	0.053544	0.076835	0.696873	0.4932	0.021597	0.122914	0.057986	2.119713	0.0383	0.071899	0.053544
SD											0.015455
t-stat											1.13197
Dependent Variable: QE_INS											
DFM_INS	1.192661	0.332931	3.582311	0.0017	0.368414	0.425363	0.172902	2.460143	0.0169	0.094490	0.767298
FTSE_100	0.076496	0.022744	3.363307	0.0028	0.339574	0.035207	0.007635	4.611285	0.0000	0.268268	0.041289
OIL_PRICE	0.029942	0.009520	3.145153	0.0047	0.310172	0.006039	0.005110	1.181726	0.2421	0.023511	0.023903
S_P_500	0.089988	0.019069	4.719027	0.0001	0.503041	0.029434	0.007125	4.130893	0.0001	0.227329	0.060554
TASI_INS	0.310657	0.137514	2.259092	0.0341	0.188297	0.140270	0.081228	1.726865	0.0895	0.048901	0.170387
SD											0.195897
t-stat											2.427708

As in table 7 the computed t value is 0.82 for Saudi stock market as independent, 1.13 for Dubai stock market and 2.42 for Qatar stock market respectively. All these values of t are smaller than the critical value of 2.5. So we are unable to reject the null hypothesis of no difference in the integration of markets before and after the implementation of IFRS. The hypothesis of no difference in the mean value of the parameters cannot be rejected with 99% confidence level. So it can be safely concluded that no significant change has occurred in the behavior of investors after the implementation of IFRS and the degree of market integration has not increased.

10. CONCLUSION

The study questions whether the adoption of IFRS by Saudi insurance companies would bring Saudi stock market toward more integration with other stock

markets in Gulf States, namely Qatar, and Dubai stock markets.

To measure the possible effect of the adoption of IFRS on the integration of capital markets in the GCC countries, the study uses the matrix of the stock market index returns for the insurance sector from 2007 to 2013 as a proxy for the national stock market index returns. First, correlation coefficients among concerned stock markets were calculated for the two periods. Second, the causal nexus among financial variables has been investigated by employing the cointegration analysis, first Dickey and Fuller was used, then Ordinary Least Squares technique was utilized to examine the relation between these capital markets before and after the adoption of IFRS.

In general, the findings indicate that the adoption of IFRS by companies in the GCC stock markets would not enhance integration of their capital markets. It is evident that although there are some degrees of correlation among GCC stock markets, this nature of correlation is more likely representing the global trend toward more integration of world stock markets as well as the reliance of their economies on oil revenue. So, it can be concluded that accounting standards alone will not bring the desired outcomes unless the other parts of the system work in the same direction. Other factors, such as regulations and developments, might have a critical role to enhance the relation between these stock markets. These results support the argument which says that the system of accounting reporting is a part of an integrated system which is composed of laws and regulations, culture and incentives (e.g. Ball et al., 2000, Leuz et al., 2003, and Burgstahler et al., 2006).

To improve the integration of their capital markets, these findings recommend regulators of the stock markets in the GCC states to take number of decisions in addition to sharing one set of accounting standards such as unifying and easing their regulations with respect to the investments flow among each other as well as with foreign investments.

Finally, the findings of this study should be read with full understanding of its limitations. The most important limitation relates to the data which covers a period of 2007 to 2013 during which world financial crises has occurred, in particular during 2008-2009. Also, a conscious may need to be raised about the results of the test of correlation coefficient here since observations for the two periods are different which would result in different degree of correlation coefficient.

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