The Effect of the Adoption of International Financial Reporting Standards on Capital Market Integration in the Gulf Cooperation Council Countries

Ali Alnodel*

College of Business and Economics – Qassim University

February 10, 2014

Preliminary Draft
Please do not quote

Correspondence concerning this article should be addressed to P.O.Box 4667, Burydah 51412 Al-Qassim, Saudi Arabia, Email: nodl@qu.edu.sa
ABSTRACT

This paper examines the effect of the adoption of International Financial Reporting Standards (IFRS) on the integration of capital market in the Gulf Cooperation Council (GCC) Countries.

To measure the degree of the integration among these markets, this study 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. It uses Dickey and Fuller (1979) to test for unit roots and Ordinary Least Squares technique in order to find the relation between different markets before and after the adoption of IFRS.

The present study finds that the adoption of IFRS by GCC stock markets has no significant impact on the integration of the capital market in the GCC countries. Pearson correlation coefficient reveals insignificant correlation coefficient of the daily index returns whether before or after the adoption of IFRS. Moreover, the results of the cointegration tests show that many of these markets do not maintain a long-term relation between them.

These results contest the premise that the International Financial Reporting Standards (IFRS) would enhance integration among capital market. The explanation for 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. These results should be of interests to the regulators in the GCC countries since their ultimate objective is to achieve one integrated capital market.

Keywords: IFRS, Integration, Capital Market, Gulf Cooperation Council
Introduction

The adoption of one set of high quality accounting standards by companies throughout the world has gained significant support worldwide. The main argument behind this dissemination is that the use of one set of accounting standards would enhance comparability and transparency of financial information. Decisions makers in the capital market will have higher quality information especially if these accounting standards are applied in a rigorous and consistent manner (Daske et al., 2008). This would create more integrated capital markets which would lead to an efficient allocation of funds, a lower cost of capital, and a flow of foreign investments. These outcomes are very important to GCC countries as their capital markets are suffering from thin trading, lack of liquidity and a lack of informational efficiency (Simpson, 2008).

Unfortunately, there are problems assuring the outcomes of the adoption of IFRS in different environments as the reporting incentives may vary which would have impacts on observed reporting and disclosure practices (Ball et al., 2000; Burgstahler, et al., 2006). The reporting incentives are formulated by several institutional and firm-level environmental factors such as legal systems, governance mechanisms, enforcement regimes, capital-market forces, financing arrangements and ownership structure (Bruggemann, et al., 2012). These factors present obstacles to achieve the expected benefits of the adoption of the IFRS (Ball, 2006; Hail, et al., 2010).

This research aims to examine the impact of the adoption of International Financial Reporting Standards (IFRS) on the integration of capital market in the GCC countries. 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 (Jappelli & Pagano, 2008).

To measure the possible effect of the adoption of the IFRS on the integration of capital markets in the GCC countries, this study focuses on four capital markets, namely the stock markets of Saudi Arabia, Dubai, Abu Dhabi, 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. 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, a correlation coefficients among concerned stock markets was performed for the two periods. Second, the causal nexus among financial variables has been investigated by employing 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.

The study found that the adoption of the international financial reporting standards has no significant impact on the integration of the capital market in the GCC countries. Pearson correlation coefficient reveals a relative small correlation coefficient of the daily index returns whether before or after the adoption of IFRS. After performing the cointegration test, our results indicate that the GCC markets do not react to the adaptation of IFRS. Moreover, the results of the cointegration tests show that many of these markets do not maintain a long-term relation between them. We believe 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.

The paper is structured as follows. Next section provides a reviews of the literature and a discussion of the context of stock markets in the GCC countries. Sections 2 and 3 discuss the research hypothesis and research methodology. Section 4 discusses the results whereas section 5 concludes.

**The Review of the Literature and the Capital Markets GCC context**

The adoption of the IFRS has been the topic of debate in the accounting literature for several years. Significant part of this literature empirically examines the net benefits of the adoption of the IFRS in the developed countries, mostly in Europe and North America. The general review of this debate reveals two competing notions. The first notion emphasizes a technical point of view of accounting standards and asserts the usefulness of using one set of accounting standards worldwide on comparability,
transparency, information contents and efficiency. The second notion relies on a holistic view and asserts the importance of institutional factors in shaping observed practical reporting and disclosure.

From the first side, proponents of the IFRS argue that IFRS is capital – market oriented therefore it is more relevant to capital markets and investors than other local accounting standards. They justify that by referring to several arguments such that reporting under the IFRS is less costly for investors to compare firms across markets and countries (Armstrong et al., 2008), facilitates cross-border investments (Bradshaw et al., 2004; Aggarwal et al., 2005), and enhances capital market integration (Covrig, et al., 2007). This would encourage foreign investments to flow into countries and in turn improve the liquidity of the capital market and risk-sharing and lower the cost of capital (Merton, 1987). This is justified as that IFRS is more comprehensive in reporting and disclosure therefore adopting IFRS improves corporate reporting and disclosure practices across countries which would improve accessibility and reduce cost of market information to investors across countries. Tarca (2012) provides a review of the arguments for one set of international accounting standards research papers and forces that have promoted the spread of the adoption of these accounting standards.

Quite a number of research studies have reported findings supporting the capital market benefits following adoption of IFRS. Specifically, some papers have reported that the adoption of the IFRS increases market liquidity (Daske, et al., 2008; Muller et al., 2011), facilitates cross-border investments by mutual funds (DeFond et al., 2011), decreases cost of equity capital (Kim & S. Li, 2010) and increases investment efficiency (Schleicher et al., 2010). Other studies report that the adoption of the IFRS improves information content of earning announcements (Landsman, et al., 2011), information transfers among countries (Kim and Li, 2011; Wang, 2011), and increases stock price synchronicity in the longer run (Beuselinck, et al., 2010).

For example, Beuselinck, et al., (2010) investigate the properties of the information contained in analysts’ earnings forecasts for mandatory IFRS adopters in Europe for the period 2003-2007. They argue that mandatory adoption of IFRS had a
significant and positive effect on the information processing of financial analysts. They admit that this does not occur homogeneously across analysts.

Dhaliwal, et al., (2013) provide initial evidence on the role of IFRS on financial market integration. They focus on the mandatory adoption of the 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) empirically examine the effects of IFRS adoption on 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.

Nevertheless, these arguments are debatable as the reporting incentives may vary across countries. The reporting incentives are formulated by several institutional and firm-level environmental factors such as legal systems governance mechanisms, enforcement regimes, capital market forces, financing arrangements and ownership structure (Bruggemann, et al., 2012). Hail et al.,(2009) extensively review literature around the adoption of the IFRS and report that a single set of accounting standards by itself does not promise the comparability of firms reporting practices whether across firms within a country or across countries. They report that evidence from academic studies suggests a limited role of standards in shaping reporting practices.

Accordingly, there is a difficulty in assuring the outcomes of the adoption of IFRS in different environments as the reporting incentives may vary and could have impacts on observed reporting and disclosure practices (Ball, et al., 2000; Burgstahler, et al., 2006).

Quite a number of research studies support the importance of reporting incentives in shaping reporting and disclosure in practices (Ball, et al., 2000; Leuz, et al., 2003;
Haw, et al., 2004; Burgstahler, et al., 2006). Moreover, some studies argue that even within a country the application of the same accounting standards may vary due to reporting incentives at the firm-level institutional factors (Ball, et al., 2003; Ball & Shivakumar, 2005; Burgstahler, et al., 2006). These studies argue that accounting standards are one part of the whole complementary system of institutional elements shaping financial reporting practices in a country.

This is explained by Bushman, et al. (2004) that report that the availability of firm-specific information to those outside publicly traded firms is output of multi-faceted systems whose components collectively produce, gather, validate and disclosure information.

From a practical point of view, KPMG (2011) reports on a study investigating the possible achievements of sharing accounting rules globally to enhance international comparability. The study asserts that sharing accounting rules globally is not sufficient condition to create a common business language. It affirms that management incentives and national institutional factors play an important role in framing financial reporting characteristics.

The implication of this view is that capital market effects around the adoption of the IFRS may not be observed as merely outcomes from the adoption of IFRS. The desirable outcomes are based up on the environment where it will be employed. This suggests that countries’ institutional structures and changes therein are as important as the accounting standards for the capital-market effects around IFRS adoption.

For example, Bruggemann, et al.(2012) discuss findings 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. Bruggemann, et al., (2012) conclude that the financial reporting effects is limited because of substantial non compliance and accounting choices at the national levels that remain unchanged. They
argue that there are unanimous evidence that the mandatory adoption of the IFRS coincides with capital-market and macroeconomic benefits.

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

For instance, for developed countries with high quality local accounting standards, the possible effects might be minor because these category of countries have local accounting standards that are more relevant to their environment. Based on a comparison between IFRS and US GAAPs, Abdel-Khalik, (2009) concludes that changing US GAAPs to IFRS is a matter of changing one rules to another.

In the other side, other research studies reveal that the case may be different from developed countries to developing countries. Gordon et al. (2012) report on a study of firms from 124 countries during the period 1996-2009 to investigate whether the adoption of IFRS would help countries to increase the inflows of foreign investments. Their study reports an increased in developing countries adopting IFRS. The study, however, reports no direct benefits for developed countries. In Jordan, Algashi (2008) tried to investigate whether the adoption of the IFRS by Jordanian companies would increase foreign investments. The study reports some increase in the inflow of foreign investments.

IFAC (2004) has raised a wariness about conditions to observe the outcomes of the adoption of IFRS. It report 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, 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.

**The Integration of Capital Markets in GCC Countries:**

The Gulf Cooperation Council was established in 1981 and it is composed of six Arabian countries namely, Saudi Arabia, United Arab of Emirates, Qatar, Kuwait, Oman and Bahrain. One of the main objective of the GCC is to accomplish economic and financial integration among each other and into the global market (General Secretaries, GCC 2014).

The issue of improving capital markets in GCC countries is a strategic objective since their capital markets are suffering from thin trading, lack of liquidity and a lack of informational efficiency (Simpson, 2008), and these countries, as their economies are criticized by its relying on oil, are trying hardly to diversified their national incomes. Table 1 below presents some key indicators about stock markets in the GCC countries as in September, 2013.

**Please Insert table 1 here**

Developing financial stock markets to be globally integrated is an important policy objective in most GCC countries. In this steam, these stock markets have observed considerable changes during the last five years such as escalating privatization programs, issuance of new shares, lunching of computer-based trading and the inter-listing of shares on their stock markets (Deutsche Bank, 2012).

Despite of the similarities among these countries with respect to their political and social systems, there are several differences in regulations, institutional and developments of their markets. These could have brought some obstacles for integrating their economics and stock markets. Mohd and Hassan (2003) report that the GCC countries need more coordination on their economic and financial policies toward financial integration within the GCC countries if they would like to accomplish economic and financial integration.
One obstacle comes from the differences in regulations. GCC countries differ significantly with respect to their developments and liberalization of their stock markets to foreign investors (Simpson, 2008). Mohd and Hassan (2003) report that only two of the six GCC countries have fully opened their markets to foreign investors, the rest whether partly opened or closed to foreign investors, unless they can only deal through mutual funds designed especially for foreigners.

Similarly, Shachmurove (2003) refers to other regulations pertaining to the purchasing of shares in the local markets by non residents, liquidity, infrequency of days of trading stocks among stock markets, lagging of domestic and political reforms, government interference and inflexible monetary policies as challenges for GCC markets to achieve globalization and benefit from foreign direct investments.

Differences in the stage of the developments among GCC countries bring another obstacle for the integration of the capital market. Simpson (2008) reports that some of the GCC markets achieved solid progress in their expansion, reforms and openness, however others need more reforms, transparency and governance. He concludes that issues relating to foreign investment openness, industry governance and transparency contributed to thin trading, lack of liquidity and a lack of informational efficiency throughout the GCC.

Onour (2009) reports on a study investigating relationship between GCC stock markets returns. He find some non-linear cointegration relationship linking some stock markets with each other. Hassan (2003) uses multivariate cointegration techniques developed to test for the existence of long-term relationships between share prices in the gulf region. It finds that prices are moving along the trend values of each other in the long-terms changes.

From a more specific point of view, Espinoza, et al., (2010) referred to the structure of the stock markets in the GCC countries as a problematic in facilitating flow of the equity. They argue that the domination of commercial banks in the financial systems limits the importance of cross-border equity flow among GCC countries. Rao and Shankariah (2003) try to develop a strategy for these countries to accelerate their effort toward more integrated economy as a one single market. They 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.

Although of these, some extent of integration between these markets is expected due to two main reasons. One is pertaining to the global trend toward more integration among world stock markets. Swanson (1987) suggests that international stock markets are becoming more integrated, and equity prices on these markets are exhibiting long-run relationships.

Mohd and Hassan (2003), who study financial integration in the GCC countries, report that the stock market integration of GCC countries might be in fact representing the correlation between share prices and oil prices. They explained that oil revenue has always been a driven force to the activities of stock markets in the GCC countries because most of these economies are oil dependent, and are heavily investing in petrochemical industries.

This explanation of the possible integration among GCC countries is appealing. 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 (Gulfbase, 2013).

The general conclusion that can be inferred from these studies is that there are several asserted benefits and costs of adopting IFRS, however the realization of such benefits across firms, markets and countries is uncertain. Furthermore, the possible effects of the adoption of IFRS on the capital market integration is of vital interest to developing countries in general and GCC countries in particular. This underlines the need for further research from different perspective and in another environment.

**The Research Hypothesis**

This study questions whether the adoption of IFRS by Saudi companies in 2009 would bringing the Saudi stock market toward more integration with other stock markets in gulf states, namely Qatar, Abu Dhabi and Dubai Stock markets.

An indicator of more integration among stock markets is the closeness of the trend of the market indices. Therefore, if the index of two stock markets are moving in the
same direction and degree, they are considered more integrated. 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". Accordingly, capital market integration can be measured by comparing the returns of assets that are issued in different countries and generate identical cash flows (Jappelli & Pagano, 2008).

Previous research has reported that the adoption of IFRS by companies in different countries enhance the availability of similar quality financial information to investors and enhance the integration of capital market (Cai & Wong, 2010). Therefore, the adoption of the International Financial Reporting Standards (IFRS) is expected to increase the integration between stock markets. Accordingly, the research hypothesis are stated as follow:

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

H2: After-adoption of the 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 that are adopting IFRS

Research Methodology

The causal nexus among financial variables has been investigated by employing cointegration analysis. Cointegration analysis tells us about the long-term relationship among equity prices of selected GCC states. 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) has been employed. In the second step, the time series is analyzed for cointegration.

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. The use of the correlation in measuring the degree of the integration among stock market indices has been widely mentioned in finance literature, (e.g., Heston & Rouwenhorst, 1994; Bekaert & Harvey, 1995; Aydemir, 2004; Chambet & Gibson, 2008; Eiling & Gerard, 2007 and Cai, & Wong, 2010).

The Data

Data represents the daily index level obtained from Gulfbase which possess a data set for all GCC countries markets. The focus was directed toward Saudi, Dubai, Qatar and Abu Dubai markets because the data for these markets were available. Oman Stock market was excluded because its insurance sector includes number of services companies so its insurance sector is different than other gulf states countries. Kuwait and Bahrain were excluded because of unavailability of data for some years.

The reason behind the use of the stock market index returns for the insurance sector 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. This provides us with two periods pre and post adoption of the IFRS. Accordingly, the sample period is divided into pre-adoption period which includes 2007 and 2008 and post-adoption period which includes 2009 to 2013.

Since the daily index level for each market included in the study was dominated by the local currency, each index return was converted into US dollars to insure consistency in the measurement of the study. The rate of return for each stock market was calculated as follows:

\[ R_{it} = \ln(P_{it}/P_{it-1}) \]

\( R_{it} \): Rate of return of country i’s stock index at t

\( P_{it} \): Price of country i’s stock index at t
The Effect of the Adoption of IFRS on Capital Market Integration of GCC Countries

**Descriptive Analysis**

Table 2 presents the composition of the insurance sector of the four markets till the end of October, 2013. In total, they account to around 21% of the whole companies listed in the four markets. Saudi stock market is listing 35 companies as the one with the largest number while Qatar Stock markets is listing 5 companies as the one with the lowest number of companies working in the insurance services. In general, the presentation of these type of companies to the whole local stock markets ranges from 12% to 22%.

**Please Insert table 2 here**

The daily returns of the insurance sectors in these stock markets during the whole period is presented in table 3. The insurance sector in Saudi stock market recorded the smallest minimum rate of return ($-.024935) and the largest maximum rate of return ($0.019410) among the all stock markets. This has resulted in a highest Std. deviation ($0.006173993) among all these 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 comparing to other insurance sectors in the three gulf states considered in this study.

**Please Insert table 3 here**

This research investigates whether the adoption of the International Financial Reporting Standards (IFRS) by all companies in GCC states would enhance the integration of capital markets in these countries. To gain a glance, a correlation for rate of returns of insurance sectors in all four stock markets during the whole period of study (2007 to 2013) was computed in table 4. The first side from the lift (shaded side) refers to the period from 2007 to 2008 and the right side refers to the period from 2009 to 2013.

**Please Insert table 4 here**

During the period of 2007 to 2008, the highest correlation coefficient reported is for Qatar stock market with Dubai stock market (.607) which is significant at .01 level. Dubai stock market reports also a correlation with Abu Dhabi stock market around (.518) during the period of 2007 to 2008.
Also, Pearson Correlation reports a correlation among three markets, namely Saudi Arabia, Qatar and Dubai at .05 level. However, the correlation coefficient for Saudi stock market with these two stock markets was moderate. As shown in table 4, Qatar and Dubai Stock markets were the only stock market correlated with all the three stock markets at different level of degrees.

In post-adoption of IFRS (2009-2013) where Saudi insurance companies adopted IFRS, the picture did not change. The test of correlation shows low correlation between Saudi, Qatar and Dubai stock markets and negative correlation with Abu Dhabi stock market.

This could indicate that the impact of the adoption of the IFRS by Saudi insurance companies may have little in enhancing the relationship between the GCC stock markets. This does not support the second research hypothesis that proposes that after-adoption of the IFRS by Saudi insurance companies, the rate of return of Saudi stock index is becoming significantly correlated with the rate of return of stock index in other GCC that are adopting IFRS.

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 (Bryman and Cramer, 2001).

**Discussion of the Cointegration Results**

Our focus is on the stock markets of Saudi Arabia, Dubai, Abu Dhabi, and Qatar. In the previous section we analyzed the correlation coefficients. However, correlation analysis is a relatively weaker technique. Therefore, the causal nexus among financial variables has been investigated by employing cointegration analysis.

Cointegration analysis tells us about the long-term relationship among equity prices of selected GCC states. 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. In order to make sure that our results are not spurious, we run Dickey-Fuller and Augmented Dickey-Fuller test to investigate the existence of unit root.
Our results show that data in all the four markets are non-stationary having a unit root. The existence of unit root causes the regression results to be spurious. One common technique to solve this problem is to take first difference of the variables and then test again if it has become stationary. After applying this method we test again and find that the hypothesis of unit root is rejected for all the four series as we can see from the results in table No 5 in the appendix. So the prices in all the four markets are I (1) and becomes stationary after the first difference. Thus, the series are integrated to the order of one I (1).

Please Insert table 5 here

After we make sure that our data is stationary, we now come to test our hypothesis that there is a difference in the markets after IFRS have been implemented. We compare the results of the regression for each market before and after IFRS using the dependent sample t-test. The hypothesis of no difference in the mean value of the parameters cannot be rejected with 99% confidence level. So we can safely conclude that no significant change has occurred in the behavior of investors after the implementation of these standards.

Since our results show that our data is stationary, we use Ordinary Least Squares technique in order to find the relation between different markets. In order to find these relations we do the regression of Saudi Stock market with Qatar, Dubai and Abu Dhabi separately before and after IFRS.

The results in table No. 6 in the appendix show that there is no relation of Saudi Stock market with each of Qatar, Dubai, and Abu Dhabi. All the coefficients are small and have small t-value that show that the coefficients are statistically insignificant. Furthermore, very small $R^2$ values also show the inadequacy of explanatory power of the model.

Please Insert table 6 here

The results after the implementation of IFRS in table 6 in the appendix also show no relation of Saudi Exchange market with Qatar, Dubai and Abu Dhabi.
Using the dependent sample t-test, we compare the results of these regressions before and after IFRS. Hypothesis testing involving pairing 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 t value is given as:

\[ t = \frac{\bar{d}}{s_{d}/\sqrt{n}} \]

The compute t value is 0.78 which is smaller than the critical value of 2.2. So we are unable to reject the null hypothesis of no difference in the integration of markets before and after the implementation of IFRS. So we can safely conclude that the behavior of investors has not changed after the implementation of IFRS.

These results indicate that the GCC markets do not react to the adaptation of IFRS. Moreover, after considering the results of the cointegration tests, which show that many of these markets do not maintain a long-term relation between them, we believe that their degree of integration is lower than discussed in the literature particularly based on the developed countries (e.g., Simpson, 2008; Mohd and Hassan, 2003).

**Conclusion**

The adoption of the IFRS by all countries of the GCC would not enhance integration of their capital markets unless this is accompanied by changes of other institutional elements that are presenting obstacles to achieve capital market integration. Despite of the similarities among these countries with respect to their political and social systems, there are several differences in regulations, institutional and developments of their markets (Shachmurove, 2003; Simpson, 2008). These could have brought some obstacles for integrating their economics and stock markets although of the uniformity of accounting standards.

The findings of this study indicate that the GCC markets do not react to the adaptation of IFRS. Furthermore, after considering the results of the cointegration tests, which show that many of these markets do not maintain a long-term relation between them, we believe that their degree of integration is lower than discussed in the literature.
particularly based on the developed countries (e.g., Simpson, 2008; Mohd and Hassan, 2003).

These results are in consistent with the argument which says that the system of accounting reporting is part from an integrated system which is composed of laws and regulations, culture and incentives (e.g., Ball, et al., 2000; Leuz, et al., 2003; Haw, et al., 2004; Burgstahler et al., 2006).

Accounting standards alone will not bring the effect unless the other parts of the system work in the same direction. Other factors might have more space to enhance the relationship between these stock markets. Regulators should work as well in issues relating to regulations, foreign investment openness, industry governance and transparency in their process of integrating their capital.

Finally, the findings of this study shall be read with the understanding of some limitations. The most important limitation is that the data for this study covers a period of 2007 to 2013 where world financial crises has occurred, in particular during 2008-2009. Another issue is that the data covers only four countries of the GCC so the results may change if other countries were included in the study.
References


## Appendix

### Table 1
Indicators of GCC stock markets in Saudi Riyals ($1=3.75 SR)

<table>
<thead>
<tr>
<th></th>
<th>Saudi Arabia</th>
<th>Qatar</th>
<th>Abu Dhabi</th>
<th>Dubai</th>
<th>Oman</th>
<th>Kuwait</th>
<th>Bahrain</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS</td>
<td>17.40</td>
<td>14.00</td>
<td>12.00</td>
<td>15.20</td>
<td>11.80</td>
<td>18.30</td>
<td>8.80</td>
</tr>
<tr>
<td>ROE</td>
<td>12.30</td>
<td>13.60</td>
<td>12.70</td>
<td>8.70</td>
<td>13.80</td>
<td>7.20</td>
<td>12.10</td>
</tr>
<tr>
<td>ROA</td>
<td>4.50</td>
<td>9.90</td>
<td>8.20</td>
<td>3.40</td>
<td>6.40</td>
<td>2.40</td>
<td>4.70</td>
</tr>
<tr>
<td>Earning</td>
<td>98.20</td>
<td>40.69</td>
<td>31.34</td>
<td>13.58</td>
<td>6.85</td>
<td>18.12</td>
<td>5.94</td>
</tr>
<tr>
<td>Dividend Yield</td>
<td>3.20</td>
<td>3.80</td>
<td>4.4</td>
<td>3</td>
<td>4.1</td>
<td>2.70</td>
<td>0.4</td>
</tr>
<tr>
<td>Market value (M.)</td>
<td>1,680.00</td>
<td>569.59</td>
<td>83.31</td>
<td>65.96</td>
<td>80.77</td>
<td>373.72</td>
<td>52.29</td>
</tr>
</tbody>
</table>
### Table 2
**Number of Insurance Companies at each Market**

<table>
<thead>
<tr>
<th>Market index</th>
<th>Number of Insurance Companies</th>
<th>Total Number of Companies at the Market</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saudi Arabia</td>
<td>TASI.INS</td>
<td>35</td>
<td>162</td>
</tr>
<tr>
<td>Qatar</td>
<td>QE.INS</td>
<td>5</td>
<td>42</td>
</tr>
<tr>
<td>Abu Dhabi</td>
<td>ADX.INS</td>
<td>17</td>
<td>66</td>
</tr>
<tr>
<td>Dubai</td>
<td>DFM.INS</td>
<td>13</td>
<td>61</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>70</td>
<td>331</td>
</tr>
</tbody>
</table>
Table 3
Descriptive Statistics of Daily Returns of insurance sectors Indices during 2007-2013

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saudi Index</td>
<td>-.024935</td>
<td>.019410</td>
<td>.000007027</td>
<td>.006173993</td>
</tr>
<tr>
<td>Qatar Index</td>
<td>-.022439</td>
<td>.010799</td>
<td>.00058743</td>
<td>.004177998</td>
</tr>
<tr>
<td>Abou Dhabi Index</td>
<td>-.004624</td>
<td>.005361</td>
<td>-.00014801</td>
<td>.001715821</td>
</tr>
<tr>
<td>Dubai Index</td>
<td>-.006602</td>
<td>.007512</td>
<td>-.00039745</td>
<td>.002463079</td>
</tr>
</tbody>
</table>
### Table 4
Correlations of Rate of Returns pre and post adoption of IFRS

<table>
<thead>
<tr>
<th></th>
<th>Saudi Index</th>
<th>Qatar Index</th>
<th>Abou Dhabi Index</th>
<th>Dubai Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saudi Index</td>
<td>1</td>
<td>.246*</td>
<td>-.010-</td>
<td>.259*</td>
</tr>
<tr>
<td>Qatar Index</td>
<td>.434*</td>
<td>1</td>
<td>0.196</td>
<td>.292*</td>
</tr>
<tr>
<td>Abou Dhabi Index</td>
<td>0.246</td>
<td>.465*</td>
<td>1</td>
<td>0.225</td>
</tr>
<tr>
<td>Dubai Index</td>
<td>0.147</td>
<td>.607**</td>
<td>.518**</td>
<td>1</td>
</tr>
</tbody>
</table>

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
The Effect of the Adoption of IFRS on Capital Market Integration of GCC Countries

Table 5:
ADF Test Results Pre- Adoption of IFRS and Post- Adoption of IFRS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-Adoption of IFRS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saudi Index (-1)</td>
<td>-0.890795</td>
<td>0.044695</td>
<td>-19.93042*</td>
<td>0.0000</td>
</tr>
<tr>
<td>Qatar Index (-1)</td>
<td>-0.776409</td>
<td>0.043809</td>
<td>-17.72269*</td>
<td>0.0000</td>
</tr>
<tr>
<td>Abou Dhabi Index (-1)</td>
<td>-1.065791</td>
<td>0.044859</td>
<td>-23.75850*</td>
<td>0.0000</td>
</tr>
<tr>
<td>Dubai Index (-1)</td>
<td>-0.997946</td>
<td>0.044947</td>
<td>-22.20285*</td>
<td>0.0000</td>
</tr>
<tr>
<td><strong>Post-Adoption of IFRS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saudi Index (-1)</td>
<td>-0.890209</td>
<td>0.028513</td>
<td>-31.22083*</td>
<td>0.0000</td>
</tr>
<tr>
<td>Qatar Index (-1)</td>
<td>-0.989112</td>
<td>0.028786</td>
<td>-34.36093*</td>
<td>0.0000</td>
</tr>
<tr>
<td>Abou Dhabi Index (-1)</td>
<td>-0.944665</td>
<td>0.028868</td>
<td>-32.72330*</td>
<td>0.0000</td>
</tr>
<tr>
<td>Dubai Index (-1)</td>
<td>-0.953155</td>
<td>0.028738</td>
<td>-33.16657*</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

*Significant at 1% level.
Table 6: Cointegration Results of Saudi Market with the other GCC Markets Pre-Adoption of IFRS and Post-Adoption of IFRS

<table>
<thead>
<tr>
<th>Market</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
<th>R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Adoption of IFRS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qatar Index</td>
<td>-0.013344</td>
<td>0.056106</td>
<td>-0.237834*</td>
<td>0.8121</td>
<td>0.000114</td>
</tr>
<tr>
<td>Abou Dhabi Index</td>
<td>0.091635</td>
<td>0.112764</td>
<td>0.812629*</td>
<td>0.4168</td>
<td>0.001330</td>
</tr>
<tr>
<td>Dubai Index</td>
<td>0.102620</td>
<td>0.081783</td>
<td>1.254783*</td>
<td>0.2101</td>
<td>0.003164</td>
</tr>
<tr>
<td>Post-Adoption of IFRS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qatar Index</td>
<td>0.013008</td>
<td>0.041019</td>
<td>0.317113*</td>
<td>0.7512</td>
<td>0.000083</td>
</tr>
<tr>
<td>Abou Dhabi Index</td>
<td>0.056234</td>
<td>0.099504</td>
<td>0.565139*</td>
<td>0.5721</td>
<td>0.000264</td>
</tr>
<tr>
<td>Dubai Index</td>
<td>0.060995</td>
<td>0.057563</td>
<td>1.059620*</td>
<td>0.2895</td>
<td>0.000928</td>
</tr>
</tbody>
</table>

*Insignificant at 1% level.