Internal corporate governance mechanisms and audit quality: Evidence from GCC region

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ABSTRACT

Using the suggestions of agency theory alone for predicting the auditor change behavior in the context of GCC countries is inappropriate because they were developed in countries with mature market-oriented economies. In this study, we examine the association of board of directors effectiveness (board of directors independence, size, financial expertise, meetings, nationality, international experience and CEO duality) and audit committee effectiveness (audit committee independence, size, financial expertise, meetings, nationality and international experience) with the incidence of auditor change among Gulf Cooperation Council (GCC) public listed companies for the period 2005-2010. We posit that using an integration framework of agency theory, managerial grid theory, and attraction-selection-attrition has more explanatory power to predict auditor change behavior in GCC setting, taking into account economic and behavioral issues. The results show that only board of directors' effectiveness is significantly associated with the incidence of auditor change. This study finds out that the economic and the behavioral activities are related to the audit demand in the GCC. Moreover, the study suggests that regulators, especially GCC stock exchanges, should force companies to disclose all relevant information related to auditor change in a transparent and timely manner, and increase law enforcement to enhance good corporate governance practices. For companies, this study proposes that they should put more emphasis on enhancing the role and the quality of the board of directors and audit committee members, as they are involved in the decision of auditor change.

1. Introduction

Although the recent institutional changes in GCC region would place an increasing demand for audit services, some concerns about the audit function still exist. Six audit failures have occurred (one in Kuwait, two in Oman, and three in Bahrain) and few qualified audit reports have been received in the entire history of the GCC. In particular, the Big 4 audit firms have been involved in two cases (Al-Shammari et al., 2008; Asiri, 2008). Al-Shammari et al. (2008) argued that the low number of reported audit failures in the GCC does not reflect a good audit function. Rather, Al-Gahtani (2005) argued that the accounting and auditing professions are still under development in

terms of presence and enforcement. The audit function, at this point, is concerned only with issues related to recording financial transactions, keeping source documents, preparing financial statements, and auditing financial statements by licensed auditors.

The current corporate governance frameworks of GCC countries do not meet the threshold sought by international investors (Gulfbase, 2009). Corporate governance reform is often investor-driven in more developed markets, but in the GCC, the burden of corporate governance improvements falls on the regulators. Much of this stems from a combination of facts such as the ownership structures of GCC companies, the ready availability of liquidity and financing from regional banks, and the relatively underdeveloped capital markets. Arab firms still tend to have concentrated ownership, so generational ties and family involvement often affects governance relations and agreements. International investors, who take corporate

governance very seriously, are often absent from GCC markets.

In the GCC, the disclosure of issues related to auditor change or rotation of audit firms is explicitly addressed in a weak manner within the codes of corporate governances. In this regard, only Omani and Qatari codes of corporate governance state that a mandatory rotation policy should be applied every four and three years, respectively. Bahraini code of corporate governance indicates that the company shall disclose items related to reasons for any changing and reappointing of auditors (Al-Shammari et al., 2008; Chahine and Tohmé, 2009; Harabi, 2007; Omran et al., 2008). For instance, according to IFC (2008) survey of 2008, around 47% of listed companies in MENA countries (i.e., GCC) indicate that they made an auditor change. Further, a large majority of banks and listed companies in MENA region (i.e., GCC) - namely 68.8% of listed companies- employ international audit firms (Binder, 2009). Under this circumstance, these concerns have negatively influenced the structure of the audit service market in the GCC, and agency problems are more likely to arise between majority and minority shareholders. Therefore, GCC region is a unique setting in terms of the context of auditor change. There is an ambiguity regarding the possible effects of auditor change on auditor independence in GCC context.

Nevertheless, several distinctive issues have been ignored by the extant research on auditor change in either the international or GCC markets:

(1) Contextually-cultural determinants in the GCC—nationality and international experience—managerial grid theory, and attraction-selection-attrition framework: the most prominent and widely-used audit theory is agency theory (Jensen and Meckling, 1976) and its relevant hypotheses suggested by Dopuch (1984) and Wallace (1980). Carey et al. (2000a) indicated that agency theory has provided a resilient and popular framework for explaining the demand for external auditing, and suggests a monitoring role for external auditors. Specifically, Wallace (1980) proposed three hypotheses for explaining the role of the audit in free and regulated markets: the monitoring hypothesis, the signaling hypothesis, and the insurance hypothesis. Consistent with the context of agency theory, Dopuch (1984) proposed that the substitution hypothesis could substitute for the demand for an external auditor, or complement its use.

However, to date, no single theory explains why companies switch from one auditor to another (DeAngelo, 1982; Schwartz and Menon, 1985). No broad theory also exists to explain how firms choose a new auditor, or weigh the cost tradeoffs in switching auditors (Blouin et al., 2007). Moreover, Clarkson and Simunic (1994) reported that the existing theory does not provide sufficient insight to identify either the complete set of endogenous variables that are jointly and simultaneously determined with audit quality, or the exogenous variables which underlie them. In addition, it is difficult to categorize the potential determinants influencing auditor choice based on the underlying theories because of the incompleteness of the underlying theories related to auditor choice; the overlapping of the theories with each other; and the ignorance of behavioral issues related to auditor choice (Beattie and Fearnley, 1998). Consistent with this, Meyer (2006) indicated that theories based on Western countries may be unsuitable for, and irrelevant to, other countries.

Beattie and Fearnley (1998) indicated that the theory of auditor change is based heavily on economic theory (agency theory), ignoring the behavioral issues of audit clients that undoubtedly have a significant impact on business ethics. Therefore, economic theory can provide only a partial explanation, and is not sufficient to explain audit change behavior. For Arab firms, the agency theory perspective alone may not fully account for the diversity in management characteristics, because it suffers the limitation of social context in which firm activities are embedded. Eisenhardt (1989) also argued that agency theory presents a partial view of the world; a capitalistic market-oriented system. One promising approach to developing such a theory is to consider the behavioral issues related to audit service. In addition, it is increasingly argued that there is a need for a more multi-theoretic approach towards understanding board of directors issues. Thus, this study has introduced two contextually-cultural determinants—nationality and international experience—that have not been previously linked with auditor change. Culture factors, such as nationality and international experience, may influence perceptions and meanings of auditing concepts such as independent, accountability, and trust. They are also found to influence management behavior, and auditing can play an important role in resolving agency conflicts by acting as a monitoring device (Craswell et al., 1995; Francis and Wilson, 1988; Haniffa and Cooke, 2002; Palmrose, 1984a; 1984b). For this reason, nationality captures the impact of just one country/culture to which the person has been exposed, while international experience captures the impact of all countries/cultures to which the person has been exposed.

By linking nationality and international experience with auditor change, this study is unlike two prior studies, which linked, empirically, client culture with auditor choice. Che Ahmad et al. (2006) examined the relationship between the ethnic groups (Chinese, Bumiputra, and foreign ownership) and audit quality in the Malaysian context. They refer to the issue of ethnicity and not nationality because the Chinese examined in this study may have a Malaysian nationality, but their ethnic group is Chinese. In addition, Woodworth and Said (1996) have examined the relationship between internal auditors and auditees and focused on the reactions of auditees with different cultural orientations—nationalities—to a set of audit encounters in Saudi

Arabia. Their study compared the internal auditors' nationalities with the nationalities of their employers. Unlike these studies, this study narrows the concept of "culture" from its broad meaning of social, political, and other factors, to the concept of "nationality" based on Hamid et al. (1993) suggestion and "international experience." In GCC countries, any person who does not hold a GCC nationality is considered a foreigner, regardless of his ethnic group. This includes other Arab nationalities working in the GCC.

This study also introduces two behavioral theories that have not been previously used in the auditing discipline. Managerial grid theory and Attraction-selection-attrition framework have been applied to explain the associations of board of directors nationality, audit committee nationality, and international experience with the demand for audit quality. These theories complement each other. According to the conjectures of managerial grid theory and attraction-selection-attrition framework, people will be attracted not only to jobs, but also to organizations of a particular sort, in which directors may show concern for people of a similar type. Klein et al. (2009) found that the Arab world is a collectivist society, as compared to individualist culture, and is manifested in a close, long-term commitment to the member "group," that being a family, extended family, or extended relationships. In addition, Mona (1986) reported that the "Arab manager lives and works within a social structure where family and friendship dominate attitudes." In particular, Haniffa and Hudaib (2006) found that GCC countries' societal structure increases nepotism and cronyism, and results in limited professionalism in most significant institutions, including the auditing profession. GCC countries' nationals, generally, are influenced by tribal and sectarian affiliation. They are concerned only about their image, etiquette, and ceremonies required to meet certain expectations at work.

Al Bahar et al. (1996) argued that the diversity of managers' nationalities can cause a significant variation in companies that is influenced by the unique Arabic culture and management style. In other words, Arabic culture can be mediated by variables such as nationality of management. Laurent (1993) has determined that nationality has a significant influence on shaping managerial assumptions more than any other national culture characteristics. Cultural factors may influence perceptions and meanings of auditing concepts such as independence, accountability, and trust. All studies on culture show that learning about the culture of the auditee will offer guidance to the auditor. "With an understanding of how the client manages, the auditor can determine which audit tests to perform, which areas to ignore, and which areas to explore" (Haniffa and Cooke, 2002).

Woodworth and Said (1996) observed that, within the auditing function, the significance of the cultural dimension of nationality lies in the behavior of auditees, their reaction to workplace requirements, and their relationship to the auditor. The existence of several types of nationalities in the market will lead to significant differences in agency costs and hiring distinctive levels of quality auditors because the variation in the management styles causes differences in the business practices of risk, monitoring and investment (Eichenseher, 1995; Muzaffar, 1989). In this regard, the more directors of Gulf nationality on the board and audit committees, the greater the family and friendship relationships, which will increase the nepotism and cronyism that are influenced by tribal and sectarian affiliation. As a result, the effectiveness of the monitoring and advice functions would be reduced. The role played by auditing in resolving agency conflicts by acting as a monitoring device will be diluted, resulting in a high frequency of auditor changes.

In opposition, managerial grid theory also postulates that managers may have a high concern for production. According to Al Bahar et al. (1996); companies concerned about production are less likely to be influenced by Arabic culture and are more likely to adopt a strong, western-orientated approach. Consistent with this suggestion, Hope et al. (2008) empirically reported that multinational companies are less likely to be influenced by home country cultural norms than are local firms. Ali and Azim (1996) found that, in GCC private companies, the priority in business is given to foreigners more than to locals. For instance, employers in the private sector depend heavily on foreigners who, in many cases, assume important positions and begin making vital decisions immediately. Foreigners, because of their backgrounds, are suggested to be more sensitive than nationals to the host country's organizational and work problems. That is, the nationals often are not aware of existing problems and tend to take things for granted.

A manager of foreign nationality is considered a source of knowledge about doing business in foreign countries. Managers born in a foreign country are expected to possess valuable knowledge about economic and market factors and institutions. Further, they are aware of culture, behavior, and norms of foreign countries, characteristics which may be invaluable in making strategic decisions. Luo (2005) suggested that foreign natives can effectively process information regarding their origin country and find appropriate solutions for improving information processing. Besides the advantage of individual level knowledge, heterogeneity of managers' nationalities is invaluable for making strategic decisions. For instance, heterogeneous backgrounds of the managers lead to different perspectives on, and interpretations of, a particular situation. In this regard, it reduces individual bias and group think and increases the quality of team decisions. Keck (1997) indicated that the composition of management should reflect the company's complexity. Hence, heterogeneous backgrounds of management are expected to lead to a better understanding and interpreting the complexity of the firm's internationalization. In

support of this reasoning, a practitioner-oriented study conducted by the U.S. Conference Board found that the more multinational the management, the more successful global companies are. The existence of foreigners in the Arab firms creates a logically management styles through which the diversity is accepted and there is a tolerance and flexibility for the uncertainty.

(2) Combined scores of board of directors and audit committee effectiveness using a combined-theoretic perspective of economic and behavioral theories: the extant research has empirically linked auditor change with board of directors and audit committee characteristics in individual tests (Archambeault and DeZoort, 2001; Nazri et al., 2012a). These studies have resulted, to some extent, in conflicting and inconclusive results. This is because they considered governance mechanisms in isolation from each other, and how each mechanism addresses agency problems, thereby ignoring the idea that the effectiveness of a single mechanism depends on the other mechanisms. A very recent study conducted by Cassell et al. (2012) had investigated the influence of the corporate governance index (independence, meetings, and financial expertise of board and audit committee members) on auditor switch from a Big 4 to a non-Big 4. They conclude that board of directors effectiveness is related to auditor-client realignments. Therefore, the optimal combination of corporate governance mechanisms is considered better in reducing agency cost and protecting the interest of all shareholders, because effectiveness of corporate governance is achieved via different channels, and a particular mechanism's effectiveness depends on the effectiveness of others (Cai et al., 2009).

In addition, Ward et al. (2009) have argued that it is best to look at corporate mechanisms as a bundle of mechanisms to protect shareholder interests and not in isolation from each other, because these governance mechanisms act in a complementary or substitutable fashion. Agrawal and Knoeber (1996) have also argued that the results of the effect of single mechanisms might be misleading, by showing that the effect of some single mechanisms on firm performance disappeared in the combined model. The measurement effect is stronger when investigating the overall corporate governance mechanisms than examining them individually.

This study argues that the integration of board of directors (independence, size, meetings, CEO duality, financial expertise, nationality, and international experience) and audit committee characteristics (independence, size, meetings, financial expertise, nationality, and international experience) reduces agency conflicts by enhancing the effectiveness of monitoring and providing advice, using a combined theoretic perspective of agency theory, managerial grid theory, and attraction-selection-attrition framework. This combination reveals the differing influences of various categories of board and audit committee characteristics among GCC firms.

Different board of directors and audit committee characteristics may be explained by different agency conflict variables. If this is the case, it is in line with client firms perceiving that specific board of directors and audit committee characteristics provide information about the board's and audit committee's ability to alleviate specific types of agency conflicts.

Previous studies on auditor change have been conducted primarily in countries with Anglo-Saxon legislation, such as the U.S and U.K, and they are heavily based on agency theory. Furthermore, they have resulted in contradictory and inconclusive results. Thus, the findings of the previous studies might not be applicable in the context of the GCC, which is a dissimilar setting in terms of audit market, institutional framework, level of regulatory enforcement, and culture. In this regard, DeFond and Francis (2005) called for research on auditor choice outside the U.S. Pugliese et al. (2009) emphasized the development of a broader view of corporate governance that accounts for the different national institutions in which corporate governance practices are embedded. In light of these deficiencies, auditor change issues seem to require further empirical investigation. Haniffa and Hudaib (2006) reported that a paucity of research exists concerning audit function in the GCC. Little is known, and many questions remain unanswered, about audit markets in the GCC. Yet, to the best of the researcher's knowledge, no empirical evidence exists that allows conclusive determinations to be made regarding how companies incorporating in GCC countries change their auditors. Thus, this study examines factors leading to auditor change in GCC countries.

The remainder of the paper is organized as follows. Section 2 discusses the literature review and the hypotheses development. Section 3 describes the research method. The empirical results are presented in section 4. And, section 5 provides the conclusions.

2. Literature review and development of hypotheses

2.1. Board of directors effectiveness

Based on the suggestions of agency theory, managerial grid theory and attraction-selection-attrition framework that different characteristics of board of directors may explain a variation in the audit demand. Past research demonstrates that board of directors is the highest authority at the company level that is responsible to work in the best interest of shareholders, to defend these interests and to fight against nonqualified managers (it joins the roles of control and authorization). Further, the board of directors is the common apex of the decision control system in public corporations, is a market-induced, low-cost mechanism for monitoring management. Shareholders delegate their decision control rights to boards as a more efficient way of ratifying and monitoring managerial decisions and,

thus, monitoring managerial decisions becomes essential for a board of directors to ensure that shareholders' interests are protected. According to IFC (2008), around 49% of listed companies in MENA countries (i.e., GCC) consider the responsibility for corporate governance policies to the board—in-line with good practice. Nevertheless, the role of the board is often misunderstood in the MENA region. According to the survey, 89.9% of MENA banks and listed companies stated that the board, and not management, was responsible for setting corporate management, which is contrary to the good practice that management develops, and the board reviews and guides corporate strategy.

The board fulfills two functions: monitoring management and providing expert advice. Both functions imply that the board plays a role in the auditor choice decision. Therefore, the board of directors can influence in a substantial way the decision of auditor choice. According to the same survey, 36% of the listed companies in MENA countries (i.e., GCC) indicated that the selection of the external audit firm is a competence of the board. In particular, board independence is considered by the agency theory as the most effective monitoring and controlling device of firm activities. Avoiding legal liability and punishments, independent auditors imply effective monitoring by demanding a higher audit quality (Beasley et al., 2000). Beasley and Petroni (2001) had found that the presence of independent board members is associated with hiring a Big-6 specialist auditor. Lee et al. (2004) documented a negative association between the proportion of independent board of directors and the incidence of auditor change. In the same regard, Chen and Zhou (2007) reported that firms with more independent boards dismissed Andersen earlier and hired a Big 4 successor auditor. As for AL Majlis, The GCC Board Directors Institute's report in 2011, a round 64% of board members in GCC boards are independent. This increase may be a result of newly enacted regulation in the region.

The above studies on auditor choice have empirically linked auditor choice with board of directors' characteristics in an individual test (Beasley and Petroni, 2001; Lee et al., 2004). They have resulted, to some extent, in conflicting and inconclusive results. Another emerging line of research in auditor choice has examined board of directors' characteristics using a composite score. For example, Cassell et al. (2012) have investigated the influence of corporate governance index (independence, meetings, and financial expertise of board and audit committee members) on auditor switch from a Big 4 to a non-Big 4. They concluded that board of directors effectiveness is related to the auditor-client realignments.

The current study investigates the board of directors characteristics including, independence, size, meetings, CEO duality, financial expertise, nationality and international experience in a group to encapsulate their impact on auditor choice. This examination method is consistent with the combination of board of directors characteristics as a better proxy for the board of directors effectiveness as perceived by client firms in the hopes of decreasing agency conflicts through the enhancement of the monitoring function and provision of advice. Various characteristics of board of directors may be explained through various agency conflict variables. Accordingly, the rationale is consistent with client firms' perception that specific characteristics offer information concerning the board's ability to minimize particular types of agency conflicts.

The foregoing discussions are summarized in expecting direct evidence on the association between board of directors effectiveness and auditor change. The testable hypothesis is stated in a direct form:

H_1: Ceteris paribus, there is a negative association between boards of directors effectiveness and auditor change.

2.2. Audit committee effectiveness

Agency theory, managerial grid theory and attraction-selection-attrition framework conjecture that different characteristics of audit committee may explain a variation in the audit demand. An important role of monitoring has been played by the audit committee in assuring the quality of financial reports and corporate accountability. The audit committee's role stands in the middle between the board of directors and the external auditor in bridging the information asymmetry, facilitating the monitoring process, and enhancing the auditor independence (Carcello and Neal, 2003; Mautz and Neumann, 1977). Committee members can attempt to persuade management to select a more knowledgeable auditor with greater reputation (Carcello and Neal, 2003; Kaplan and Mauldin, 2008). Effective audit committee should block unjustified auditor switches as an incidence of opinion shopping (Archambeault and DeZoort, 2001). Moore et al. (2006) argued that audit committee has to be responsible for selecting the external auditor and not the managers. A recent report released by AL Majlis, The GCC Board Directors Institute in 2011 indicates that 67% of GCC companies have an audit committee (increased from 20% in 2009).

The extant research on auditor choice has linked audit committee characteristics and auditor choice in individual tests (Abbott and Parker, 2000; Archambeault and DeZoort, 2001; Carcello and Neal, 2003; Lee et al., 2004). These studies have resulted in contradictory and inconclusive results. A very recently empirical study conducted by Cassell et al. (2012) had examined a composite measure of audit committee characteristics with auditor-client realignments. Thus, the present study tests the audit committee characteristics (independence, size, meetings, financial expertise, nationality and international experience) as a combined measure in

order to capture the aggregate effect of these characteristics on auditor choice. This is consistent with the integration of audit committee characteristics being a better proxy for the board of directors effectiveness perceived by client firms to reduce the agency conflicts by enhancing the effectiveness of monitoring function and providing advice. Different audit committee characteristics may be explained by different agency conflict variables. If this is the case, it is in line with client firms perceiving that specific audit committee characteristics provide information on the audit committee ability to alleviate specific types of agency conflicts. The reasoning behind using the aggregate measure of audit committee characteristics is the same stated above about the composite measure of the board of directors effectiveness in section 2.1.

The foundation of the above discussion leads the present study proposing direct evidence on the association between audit committee effectiveness and auditor change. The testable hypothesis is stated in a direct form:

H2: Ceteris paribus, there is a negative association between audit committee effectiveness and auditor change.

3. Research method

3.1. Sample and data

The population of interest comprises of all non-financial companies listed on the Stock Exchanges of the five members of the Gulf Co-Operation Council (GCC) with auditor switches during the period from 2006 to 2009. This selection is the most recent test period for which data were available. Further, the boom of the GCC clearly emerged in early 2005 (Chahine and Tohmé, 2009). A span of four-year period was employed because it was assumed to be superior to a shorter period, which might be more susceptible to unusual events. A period longer than four years, however, would extend the company comparisons to a time too long after the auditor change event to be of interest. Another reason for using a four-year period is that this study is restricted by the data availability. The information has been gathered as of two points in time: (1) the first fiscal year-end "t-1" (before an auditor change): to correspond approximately to the year before the auditor change, and (2) the third year-end "t1" (after the auditor change): to correspond approximately to the year after the auditor change. Further, this study targets companies that have not changed their auditors in the auditor change as they did not change their auditors between 2006 and 2009.

All data that are denominated in several currencies of the five members of the GCC are translated into US dollar equivalents for the purpose of the study.

One of the problems associated with combing observations on financial statements items from individual countries into one data set is differing monetary units. To address this problem, we converted all monetary figures to US dollars using the WB (2012) official exchange rate, available at http://data.worldbank.org/indicator/PA. NUS.FCRF.

To reduce noise and avoid the need to proxy for non-agency cost variables, several non-agency cost motivated variables that lead to the cases of auditor changes are excluded as follows. First, companies that have experienced a bankruptcy (DeFond, 1992; Lee et al., 2004; Menon and Williams, 2008; Carcello and Neal, 2003). Second, companies that have selected a new auditor twice or more during the period considered in this study are eliminated from the sample (DeFond, 1992; Khalil et al., 2010; Chan et al., 2007). Third, companies that own subsidiaries of other companies of 20% or greater are also excluded from the sample in the current study (DeFond, 1992; Johnson and Lys, 1990). Forth, companies that change their auditors because of merging at any time during the period considered in this study are excluded (Johnson and Lys, 1990; Lennox, 2000; Khalil et al., 2010). Fifth, companies that have received adverse or disclaimer opinions at any time during the period considered in this study are eliminated (DeFond, 1992). Sixth, companies that have changed their auditors because of a mandatory rotation policy (DeBerg et al., 1991). Seventh, companies that are engaged in banking, insurance or diversified financial services are excluded (Hudiab and Cooke, 2005; Chan et al., 2007; Jackson et al., 2008; Desender et al., 2009; Carcello and Neal, 2003). Finally, companies that their auditors resign are also eliminated (Carcello and Neal, 2003).

Applying the above criteria, excluding non-auditor change companies, and also eliminating companies with incomplete data, (Incomplete data documented in the GCC settings are cases of the following: (1) Missing annual reports of the considered periods of the study. (2) Newly listed companies. (3) Companies under suspension. (4) Annual reports missing of corporate governance information. And (5) Companies with no official websites) the sample size was reduced to 109 auditor-change companies. After the screening process for the two-year period; before (t-1) and after (t1) the auditor change, no multivariate outliers are reported for the pre-auditor change model. While for the post-auditor change model, one case has been detected as an outlier. Thus, a final sample of 109 auditor-change companies were identified to be eligible for inclusion in the analysis of pre-auditor-change model (t-1) and 108 auditor-change companies to be included in the post-auditor-change model (t1).

From Table 1, it is noted that the frequency of voluntary auditor changes among listed companies in the GCC is high (109 cases [23%] from 2006 to 2009) compared with previous studies. For example, Woo and Koh (2001) had reported that the percentage of auditor-change firms ranges from 0.97% (in 1995) to 4.21% (in 1990). While in UK, Beattie and Fearnley (1995) had reported that a total of 341 companies out of 2079 listed companies

(16.4%) changed their auditors at least once during the period 1987 to 1991. It is also well-recognized that the frequency of a mandatory rotation among listed companies in the GCC is very low (28 cases [20%] out of the total auditor changes from 2006 to 2009).

Table 1: Sample selection process

	Saudi Arabia	Oman	Qatar	Bahrain	Abu Dhabi	Dubai	Total
Total listed companies	149	119	44	45	63	62	482
Incomplete Data	(18)	(16)	(11)	(5)	(17)	(6)	(73)
A mandatory Rotation Policy	0	(24)	(4)	0	0	0	(28)
Twice or more auditor changes	(18)	(5)	(5)	0	0	(2)	(30)
Banks and Financial Services	(11)	(28)	(7)	(23)	(14)	(23)	(106)
Insurance Companies	(31)	(2)	(6)	(6)	(15)	(12)	(72)
Non-auditor Changers	(25)	(2)	(5)	(9)	(10)	(13)	(64)
Remaining number of subjects selected for testing (auditor changers)							109

As aforementioned, the auditor-change companies (t_{-1}: 109; t_1: 108) had auditor changes between 2006 and 2009. Of 482 listed companies in the GCC, only 64 were identified to be non-auditor-change companies as shown above in Table 1.

The non-matched sampling has been previously used by Archambeault and DeZoort (2001), Eichenseher and Shields (1989).

This study was unable to use to the matching-pair sampling design due to the insufficient number of non-auditor-change companies for the control group. Therefore, with the high sample attrition due to a lack of available data for the control group, to test for robustness of the matched-pair sampling design that aims at controlling the bias in observations, the number of auditor-change companies (experimental group) was reduced to meet the number of the control group clients based on size, year and industry, where possible in the additional analysis in section 6.7.

Sampling bias is not a problem for this study because companies selected represent the whole population.

After the screening process, final sample of 63 non-auditor-change companies were identified to be eligible for inclusion in the analysis of pre-auditor-change model (t_{-1}) and 64 non-auditor-change companies are to be included in the post-auditor-change model (t_1). Since the auditor-change and non-auditor change companies represent the whole sample of GCC companies, it is expected that the major systematic differences between the auditor-change and non-auditor change companies are reduced.

The data about auditor changes for the period from 2005 to 2010, board of directors effectiveness, audit committee effectiveness, audit fees, and management change are hand-collected from the companies' annual reports obtained from the six GCC stock exchanges, companies' official websites, Argaam official website, Gulfbase (2009), and Google. Data of firm size, firm performance, and leverage are extracted from DataStream financial database by referring to the Datastream Manual. Any missing financial data from the database are hand-collected from the respective annual reports.

Two approaches are implemented in the social science to resolve research problems. These include: (1) the qualitative approach and (2) the quantitative approach. This study applies the quantitative approach that takes the characteristics of accounting research paradigm in answering the research questions highlighted by this study. All of the data in the current study are secondary in nature collected from corporate annual reports and financial database. In the accounting research paradigm, the researcher develops the research hypotheses by reviewing comprehensive academic studies and then expresses these hypotheses in a form of a mathematical model. In the next step, the researcher collects the data in a highly structured manner followed by the analysis process using the mathematical and statistical technique (Chua, 1986).

3.2. Regression model

Agency theory, managerial grid theory, and attraction-selection-attrition theory are used to develop a model of auditor change. As already discussed, different board and audit committee characteristics may give rise to demand for different quality levels. The variables proposed for inclusion in the model capture differences in the behavior and in the costs of agency relationships. Since the dependent variable is a dichotomous, non-metric scale measurement; auditor change vs. non-auditor change, to estimate this model, Multivariate Analysis is applied using logistic regression model. The functional equation of logistic regression model is utilized to determine the extent of the influence of each of the independent variables on the propensity of auditor change:

$$\text{Prob (CHANGE = 1)} = \beta_0 + \beta_1 \text{ BDE\_SCORE} + \beta_2 \text{ ACE\_SCORE} + \beta_3 \text{ GOV\_OWN} + \beta_4 \text{ FAMILY\_OWN} + \beta_5 \text{ DOMESTIC\_OWN} + \beta_6 \text{ FEE} + \beta_7 \text{ LASSET} + \beta_8 \text{ LEV} + \beta_9 \text{ ROA} + \beta_{10} \text{ MGT\_CHAN} + e \qquad (1)$$

where the dependent variable is:

- Prob (CHANGE =1) = the estimated conditional probability of auditor change is a function of firm-related variables, board of directors' effectiveness score, ownership structure, audit committee effectiveness's score, audit-related variables, and auditor-related variables,

where the independent variables are:

- BDE_SCORE= proportion of board of directors effectiveness,

- ACE_SCORE= proportion of audit committee effectiveness,
- Control Variables= proportion of audit committee effectiveness,
- GOV_OWN= percentage of 5 or more of the ordinary shares held by the government and its agencies,
- FAMILY_OWN= percentage of 5 or more of the ordinary shares held by a family,
- DOMESTIC_OWN= percentage of 5 or more of the ordinary shares held by domestic corporations,
- FEE= proportion of firm's revenues to audit firm's total revenues,
- LASSET= $\log_{10}$ of the total assets,
- LEV= total debt to total assets,
- ROA= return on assets,
- MANG_CHAN= dummy variable, coded "1" if there is a change in chairperson, CEO and other board members and "0" otherwise,
- E= Error term.

Since logistic regression is used to test the hypotheses, outliers are detected and handled, assumptions of multicollinearity and model specification tests such as Linktest and Box-Tidwell are met. Hair et al. (2006) reported that Logistic regression model does not require the assumption of multivariate normality.

The dependent variable, prob (auditor change), is a binary variable coded "1" if the auditor is changed and "0" otherwise (Carcello and Neal, 2003; Nazri et al., 2012b; Woo and Koh, 2001; Chow and Rice, 1982). Board of directors effectiveness, BDE_SCORE, and audit committee effectiveness, ACE_SCORE, are measured as a score ranging between "1-0" with a higher score indicating a higher effectiveness of the board and audit committee.

We also control for the effect of eight agency-related variables on auditor change. As for government ownership GOV_OWN, agency theory suggests a positive association with auditor change. Guedhami et al. (2009) documented a significantly negative relationship between the government's equity stake and the choice of Big 4 audit firms. Wang et al. (2008) reported that local SOEs have the strongest propensity to hire small local auditors, while central SOEs are not different from non-state firms in their likelihood of hiring small local auditors. Chan et al. (2007) found a negative association between government ownership and auditor size. In terms of family ownership FAMILY_OWN, this study uses the agency framework and follows Carey et al. (2000b) argued that agency problems such as self-interest, conflict of interests and goals and information asymmetry can still arise in family businesses. Therefore, agency theory predicts the existence of potential conflict in family business. Carey et al. (2000b) found that the demand for audit quality is positively associated with the degree of family ownership. This is because of the existence of non-family members and representation on the board of directors. Regarding domestic

corporate ownership DOMESTIC_OWN, The agency costs would be reduced in a case when there is an increase in the holdings of the owner-largest shareholder. Therefore, the controlling owners will be motivated to improve earnings in formativeness due to their need in managing earnings for the purpose of alleviating contractual constraints. This circumstance is associated with demanding a higher audit quality (Jensen and Meckling, 1976). Hiring a high audit quality by the controlling owners is expected to signal a good practice of corporate governance and it gives a credible financial reporting from the perspective of the minority shareholders and other investors. Corporate ownership can reduce the costs of monitoring the alliances or ventures between firms and their substantial shareholders in companies involved in certain business agreements. It is further indicated that higher degrees of technical and organizational and financial resources are provided by domestic investors than those provided by foreign investors (Khanna and Palepu, 2000).

With regard to audit fees FEE, some studies argue that the client firm's cost savings arising from audit fee reductions is an important reason for auditor switches, i.e. the firms change auditors to get cheaper auditing services (Beattie and Fearnley, 1995; DeAngelo, 1981; Ettredge and Greenberg, 1990; Hogan, 1997; Simon and Francis, 1988). Che Ahmad et al. (2006) had empirically reported that there is a positive association between auditor choice among brand name and audit fees. Woo and Koh (2001) found that higher audit fees are associated with auditor changes. For firm size LASSET, Palmrose (1984a, 1984b) indicated that as client firm size increases, the agency costs are expected to increase due to the increased remoteness of principals from the observation of agents' actions. Previous studies show a positive association between firm size and auditor change (Johnson and Lys, 1990; Haskins and Williams, 1990). Firm size is measured as the $\log_{10}$ of total assets (Carcello and Neal, 2003; Johnson and Lys, 1990; Eichnseher and Shields, 1989; Francis and Wilson, 1988; Palmrose, 1984a; 1984b).

As for leverage LEV, Jensen and Meckling (1976) suggested that managers and owners have the opportunities to transfer wealth from debt holders to themselves. As the amount of debt increases, the potential amount of the wealth transfer away from debt holders increases which, in turn, results in a greater incentive for such transfers and a greater demand for monitoring. A more independent auditor is therefore needed to increase the reliability of accounting information used to verify covenant compliance. Leverage was shown to be a significant auditor change factor by Woo and Koh (2001). As with firm performance, ROA, the extant literature has shown that the economic condition of a firm is associated with auditor changes. It is evidenced that financially distressed firms are more likely to change their auditors than healthy firms. With respect to management change MANG_CHAN, a change in

management director causes a switch to another audit firm because new management attempts to disassociate from previous relationships and prefers to deal with familiar parties. A new management team charged with the responsibility of bringing about a corporate recovery may view the selection of reporting methods as a means for influencing the decisions of suppliers of capital by portraying corporate performance in a more favorable light, and this may be facilitated by finding an auditor willing to sanction those methods advocated by management (Hudaib and Cooke, 2005; Schwartz and Menon, 1985; Woo and Koh, 2001). Carcello and Neal (2003) reported a significantly positive relationship between management change and the auditor change after receiving a going concern report.

4. Empirical results

4.1. Descriptive statistics and univariate analyses

Board of directors effectiveness, audit committee effectiveness, and eight control variables are included and classified by auditor-change companies and non-auditor-change companies for two-year period surrounding the auditor change; t_{-1} and t_1. Tables 2 and 3 provide descriptive statistics and univariate test results for variables measured as continuous metrics and dichotomous variables, respectively. A possible explanation for the differences in the results of this study compared to those of the others could be attributed to the sample size that is not matched due to the insufficient sample size of non-auditor-change companies. The presence of auditor-change companies in the model constitutes more than 63% of the sample. Thus, the differences in sample size between the two groups may limit the statistical results of the tests (Woo and Koh, 2001; Che Ahmad et al., 2006). In addition, although the sample size of this study represents the whole sample because there is no random selection, it represents 34% of the whole sample. As indicated by Schwartz and Menon (1985) that this process may not be representative of the distribution of the population of all companies. Another explanation could be attributed to the time period over which the agency variables are measured; a time-sensitive measurements (DeFond, 1992). Thus, these conditions must be borne in mind in drawing inferences from empirical test results.

In each table, summary statistics for the full sample, auditor-change and non-auditor change companies are tabled in separate columns. For all continuous variables, mean, median, minimum, maximum and standard deviation are identified. For the dummy variables, the difference in proportion is determined. Statistical tests were performed to identify significant differences across groups, if any. The t-test is used to determine significant differences in the continuous variables between auditor-change and non-auditor-change companies. In the same manner, Mann-Whitney U-test was performed to test for differences in proportions of the dichotomous variables between the both groups of companies (Importantly, *t*-test requires normality of the sample means. Thus, the assumption of normality in this study is met). To derive a valid discussion and to provide a meaningful information, untransformed variables were used.

From Table 2, comparing the means of BDE_SCORE for auditor-change companies with those of non-auditor-change companies show a statistically significant difference at 1% level for the two-year period; t_{-1} (t = 2.55; p = .02) and t_1 (t = 2.83; p = .005). The BDE_SCOREs of auditor-change companies are 1.115 and 1.143 times greater than those of non-auditor-change companies in years t_{-1} and t_1, respectively. The significant differences occur both before and after the auditor change reveal to the fact that the management is both anticipating and reacting to behavioral and agency conflict changes. As expected, the effectiveness of the board of directors contributes in the decision of auditor change. The higher the degree of the board of directors' monitoring effectiveness is, the more involvement the board becomes into the auditor change decision. The board monitoring effectiveness comprises of independent, financial and international expert directors with frequent meetings and foreign nationalities, an adequate size and absence of CEO.

Insignificant differences were observed between audit committee effectiveness score (ACE_SCORE) and auditor change. The means of ACE_SCOREs for auditor-change companies and non-auditor-change companies are statistically insignificant for the two-year period; before (t_{-1}) (t = 0.43; p = 0.669) and after (t_1) (t = 0.09; p = 0.926) the auditor change. A possible interpretation for this result is that, in the setting of the GCC, auditor change is not one of the audit committee's primary responsibilities. In this regard, the role of audit committees in auditor change process is very weak in the GCC (Al-Moataz and Basfar, 2010; Al-Qarni, 2010). As for the control variables, the comparison of group means for the government ownership GOV_OWN, family ownership FAMILY_OWN, and domestic corporate ownership DOMESTIC_OWN reveal unsupported evidence for the association of these three dominant groups with the propensity of auditor change. The means of GOV_OWN, FAMILY_OWN, DOMESTIC_OWN for auditor-change companies and non-auditor-change companies are statistically not significant for the two-year period; before the auditor change (t_{-1}) (GOV_OWN: t = 0.34; p = 0.735), (FAMILY_OWN: t = - 1.21; p = 0.227), (DOMESTIC_OWN: t = - 0.15; p = .883) and after the auditor change (t_1) (GOV_OWN: t = 0.32; p = 0.745), (FAMILY_OWN: t = - 1.16; p = 0.248), (DOMESTIC_OWN: t = 0.09; p = 0.931). One possible explanation is that, in the setting of the GCC, these three dominant groups delegate auditor change decision to the board of directors. This result may provide support for the view that corporate governance mechanisms (ownership *vs.* board of directors) are substitution, not complementary. With

support to this, the close alignment of owners and managers creates an entrenchment problem that makes it easier for the controlling owners' interests to internally go without any objections by the board of directors (Chau and Leung, 2006; Claessens et al.,

2002). In the context of the GCC, Chahine and Tohmé (2009) had reported that Arab owners dominate and manage the rooms of board of directors and exercise a power on that.

Table 2: Comparing the means of BDE_SCORE

Variables	Full Sample (t-1: n= 172; t1: n = 172)					Auditor-Change Companies (t-1: n= 109; t1: n = 108)			Non-Auditor Change Companies (t-1: n= 63; t1: n = 64)			Auditor Changes vs. Non-Auditor Change	
												t-test	
	Mean	Medin	Min	Max.	Std.Dev	Mean	Median	Std.Dev.	Mean	Median	Std.Dev.	t-stat	P-value
BDE_SCORE_t-1 (decimal)	0.55	0.57	0.14	0.86	0.17	0.58	0.57	0.16	0.52	0.57	0.18	2.55	0.020
BDE_SCORE_t1 (decimal)	0.54	0.57	0.14	0.86	0.16	0.56	0.57	0.14	0.49	0.57	0.18	2.83	0.005
ACE_SCORE_t-1 (decimal)	0.80	0.83	0.33	1.00	0.17	0.80	0.83	0.18	0.80	0.83	0.14	0.43	0.669
ACE_SCORE_t1 (decimal)	0.82	0.83	0.33	1.00	0.15	0.82	0.83	0.14	0.82	0.83	0.14	0.09	0.926
Control Variables													
GOV_OWN_t-1 (%)	8.68	0.00	0.00	99.99	17.54	8.70	0.00	18.17	8.67	00.00	15.66	0.34	0.735
GOV_OWN_t1 (%)	8.57	0.00	0.00	74.30	16.82	8.52	0.00	16.47	8.52	00.00	16.47	0.32	0.745
FAMILY_OWN_t-1 (%)	12.12	0.00	0.00	82.77	18.63	11.42	0.00	17.60	0.003	20.4	20.65	-1.21	0.227
FAMILY_OWN_t1 (%)	11.39	0.00	0.00	82.77	17.36	13.39	0.05	19.76	13.39	5.05	19.76	-1.16	0.248
DOMESTIC_OWN_t-1 (%)	24.09	14.95	0.00	1.00	25.87	24.09	0.14	26.56	24.85	16.12	25.57	-0.15	0.883
DOMESTIC_OWN_t1 (%)	25.92	16.21	0.00	1.00	27.45	25.69	0.19	25.72	26.68	18.98	25.72	0.09	0.931
FEE_t-1 (decimal)	0.10	0.01	0.00	1.00	0.25	0.12	0.01	0.27	0.08	0.005	0.22	-0.30	0.763
FEE_t1 (decimal)	0.09	0.01	0.00	1.00	0.25	0.09	0.01	0.25	0.09	0.01	0.25	-0.26	0.798
LASSET_t-1 ($ mil)	1.82	0.21	0.00	69.26	6.78	1.77	0.14	8.03	1.91	0.34	3.86	-4.01	0.000
LASSET_t1 ($ mil)	2.35	0.29	0.00	78.12	5.28	2.56	0.45	5.07	2.58	0.45	5.07	-3.89	0.000
ROA_t-1	9.60	9.11	-16.93	42.46	10.01	9.21	8.69	10.89	10.27	10.23	8.31	-0.04	0.967
ROA_t1	7.90	7.92	-23.25	35.08	9.43	7.48	7.74	8.09	7.48	7.74	8.09	0.45	0.652
LEV_t-1	21.73	14.07	0.00	115.80	23.81	23.36	15.18	26.04	18.92	13.96	19.24	1.11	0.268
LEV_t1	20.49	12.94	0.00	113.53	21.65	19.70	14.78	19.16	19.67	14.78	19.16	0.37	0.711

Notes: Two-tailed, bold = Significant at 1% level, italic = significant at 5% level

Comparing the means of the audit fees (FEE) between auditor-change companies and non-auditor-change companies shows statically insignificant differences for the two-year period; before (t-1) (t = - 0.30; p = 0.763) and after (t1) (t = - 0.26; p = 0.798) the auditor change. Unexpectedly, this result exhibits unsupported evidence for the association of audit fees and the auditor change decision. One possible interpretation is that, in the setting of the GCC, audit fee is not an important determinant related to the decision of auditor change. Companies may prefer to avoid auditor change and its associated direct and indirect costs for just only economic benefits when they are compared with other considerations such as providing credible information to investors and creditors (Johnson and Lys, 1990; Schwartz and Menon, 1985) and/or gaining a greater market value than the present one (Gregory and Collier, 1996).

Significant differences were found between the association of firm size (LASSET) and auditor change for the two-year period; before (t-1) (t = - 4.01; p = 0.000) and after (t1) (t = - 3.89; p = 0.000) the auditor change. The LASSET of non-auditor-change companies are 1.08 and 1.01 times greater than those of auditor-change companies in years t-1 and t1, respectively. A possible explanation is that as firm size increases, there would be an increase in the disparity of agency problems which, consequently, makes it difficult for the owners to monitor managers' actions and also it becomes difficult for

debtholders to monitor managers and owners' actions. These circumstances will encourage auditees to demand a higher audit quality (Palmrose, 1984a; 1984b). This result is consistent with Haskins and Williams (1990), Johnson and Lys (1990), and Lin et al. (2009). Therefore, this preliminary result supports the association of firm size with auditor change. In terms of the firm performance (ROA), comparing the means of auditor-change group with non-auditor-change group reveals a statistically insignificant association for the two-year period; before (t-1) (t = - 0.04; p = 0.967) and after (t1) (t = 0.45; p = 0.652) the auditor change. This result indicates that auditor change in the setting of the GCC is not driven by the firm performance. This result is consistent with Abbott and Parker (2000), Chan et al. (2007), Che Ahmad et al. (2006), Wang et al. (2008) and Woo and Koh (2001). With respect to the leverage, the comparison of group means for the leverage (LEV) displays a statistically insignificant difference for the two-year period; before the auditor change (t-1) (t = 1.11; p = 0.268) and after the auditor change (t1) (t = .37; p = .711). This result is consistent with Abbott and Parker (2000), Carey et al. (2000b), Che Ahmad et al. (2006), Chan et al. (2007), Lin et al. (2009) and Velury et al. (2003). Thus, these preliminary results provide unsupported evidence for the association of firm performance and leverage with the incidence of auditor change.

Table 3 presents the descriptive statistics and univariate test results for the (dummy) variables by

auditor change. Like the previous t-test, the analysis in this table is related to the relationship between auditor-change companies and non-auditor-change companies in order to be consistent with the multivariate models. The results of the Mann_Whitney U-test [The Mann-Whitney *U*-test is used in order to compare the average ranks of management change between auditor-change companies and non-auditor-change companies. It is considered a non-parametric test that matches the t-test. The assumption of the t-test is that there is a normal distribution of the mean differences. As for the variable variance, it could be either equal or unequal. While the Mann-Whitney *U*-test assumes the two variables have the same distribution. No

assumption is made regarding the shapes of the distributions of the two variables for the distribution differences between auditor-change companies and non-auditor-change companies reveals that management change (MGT_CHANGE) is a statistically insignificant. A comparison of group percentages for management change before the auditor change (t_{-1}) (auditor-change group: 0.297; non-auditor-change companies: 0.703) and after the auditor change (t_1) (auditor-change companies: 0.459; non-auditor-change companies: 0.541) is not associated with the incidence of auditor change. This result is consistent with Chow and Rice (1982), Schwartz and Menon (1985), and Williams (1988).

Table 3: Descriptive statistics (Percentage) and univariate test results for dummy variables for auditor-change/non-auditor-change companies

	Auditor-Change Companies (t_{-1}: n= 109; t_1: n = 108)	Non-Auditor Change Companies (t_{-1}: n= 63; t_1: n = 64)	Mann-Whitney U-test
MGT_CHANGE_t_{-1}	29.7	70.3	- .456
MGT_CHANGE_t_1	45.9	54.1	-.191

Notes: ***Asymptotic significant at 1% level (two-tailed); **asymptotic significant at 5% level (two-tailed); *asymptotic significant at 10% level (two-tailed).

However, the descriptive analysis is somewhat a limit analysis because it does not consider the interrelationships among independent variables.

4.2. Logistic regression analysis results

Multivariate logistic regression [Logistic regression is used to test the model which predicts categorical outcomes with two or more categories. The predictor variables can be either categorical or continuous, or a mix of both in the one model (Pallant, 2010)] was used to evaluate the level of effect of the test variables on the decision of auditor change versus non-auditor-change using STATA. Table 4 reports the estimated model coefficients, the associated significance test results and holdout accuracy rates for the both models; before (t_{-1}) and after (t_1) the auditor change. The p-values associated the chi-square with 10 degrees of freedom are statistically significant at 1% level for the both models (t_{-1}: p = 0.000; t_1: p = 0.000), indicating a good fit. The model *chi*² is a likelihood ratio test through which the differences between the error not knowing the independents and the error when the independents are included in the model are identified.

Successfulness of the model can be assessed by evaluating its ability to predict correctly the outcomes category for cases for which the outcome is known. The overall classification accuracy and the classification accuracy of the individual preference (changed versus non-change) signify the proportion of preferences correctly expected by the logistic regression. In a perfect model, the overall percent correct will be 100%.

However, this table is not recommended to be used as a goodness-of-fit because it ignores actual predicted probabilities and use dichotomized predictions based on a cut-off which makes the result vary markedly by sample for the same logistic model. The logit models correctly classify 65.12%

(i.e., 112) of the 172 companies in the pre-auditor-change model (t_{-1}) and 67.44% (i.e., 116) of the 172 companies in the post-auditor-change model (t_1). This overall holdout accuracy rate is in line with those found by the previous empirical studies in auditor choice; 66.13%: Williams (1988); 54.17%: Choo and Koh (1989); 67.59%: Woo and Koh (2001). Due to the shortcoming of the classification table, Pallant (2001) suggested that the Hosmer and Lemeshow Goodness-of-Fit test is used to test the goodness fit of the model.

Table 4 portrays the Hosmer-Lemeshow's Goodness of Fit Test. This statistical test measures the correspondence of the actual and predicted values of the dependent variable where the cases are first divided into approximately 10 equal classes. Then, a comparison is conducted between the number of actual and predicted events in each class with the chi-square statistic. In particular, a comprehensive measure of predictive accuracy is designed by this test which is based on the actual prediction of the dependent variable. Therefore, better model fit is indicated by a smaller difference in the observed and predicted classification. If the Hosmer-Lemeshow Goodness-of-Fit test statistic is 0.05 or less, the hypothesis that there is a difference in the observed and predicted classification is accepted (Hair et al., 2006). In this study, the Hosmer-Lemeshow test statistics are greater than 0.05 for the both models before (t_{-1}: 0.399) and after (t_1: 0.343) the auditor change, indicating that both models' fit is acceptable.

Furthermore, there are several different "R²-like" measures have been developed to identify overall model fit. A pseudo R² value is measured for the logistic regression to indicate the similar R² value in the multiple regressions. The logit R² value, same as the R² in the multiple regressions, ranges from 0.0 to 1.00 (Hair et al., 2006; Pallant, 2010). The increase in the model fit decreases the –2LL up to a perfect value of 0.00 and increases the R^2_{LOGIT} up to a perfect

value of 1.0. In particular, the pseudo R^2 is a default output in STATA and is based on McFadden's R^2 (Hair et al., 2006). In this study, the R^2_{LOGIT} values for the pre-auditor-change model and for the post-auditor change model are 0.134 and 0.142, respectively, implying reasonably explanatory models and comparable to pseudo-R^2 in other studies of auditor choice; 0.11: Beasley and Petroni (2001); 0.12 - 0.15: Che Ahmad et al. (2006); 0.086 – 0.0956: Fargher et al. (2001); 0.088 – 0.093: Hope et al. (2008); 0.061 – 0.127: Knechel et al. (2008); 0.10: Roberts et al. (1990); 0.08: Wang et al. (2008).

There are two other measures that are designed similar to the pseudo R^2 and are generally classified as pseudo R^2 measures. These include Cox and Snell R^2 measure and Nagelkerke R^2 measure. In terms of Cox and Snell R^2, the higher values the greater the model fit. However, this measure is restricted by its inability to reach the maximum value of 1. Consequently, Nagelkerke has proposed a modification measure that ranges from 0 to 1. In particular, the value of 1 for the both measures indicates a perfect model fit (Hair et al., 2006). In this study, the Cox and Snell R^2 values for the pre-auditor-change model is 0.161 and for the post-auditor-change model is 0.171. These values are comparable to those found by previous studies 0.201 in Hay and Davis (2004). The Nagelkerke R^2 values for the pre-auditor-change model are 0.221 and for the post-auditor-change model is 0.233. These values are comparable to the Nagelkerke R^2 value reported by the extant literature in the auditor choice (0.209 in Hay and Davis, 2004). To sum up, the above measures indicate that the pre-auditor change model (t_{-1}) and the post-auditor-change model (t_1) are able to differentiate the companies that have changed their auditors from companies that have not in comparable comparisons, suggesting that events occurring in a time period both before and after the auditor change can explain the behavior of auditor change.

Finally, the chi-square (X^2) from the likelihood ratio in logistic regression used as a significance test for logistic model. It measures the improvement in fit after the inclusion of independent variables in the model (Hair et al., 2006). A model is described as a well-fitting model if the chi-square is significant at the 5% level or better. In this study, the likelihood ratios are (t_{-1}: 30.26; t_1: 32.31) and the p-values of chi-square test are significant at 1% level for the both models (t_{-1} and t_1) suggesting a good fit of the model. In addition, the z Statistic and p-value are used to assess the significance of each predictor's regression coefficient. Probability that a particular z test statistic is as extreme as, or more so, than what has been observed under the null hypothesis which is defined by $P>|z|$.

Board of directors effectiveness. The sign of the coefficient of the BDE_SCORE is in the opposite direction (i.e., positive) for ex-ante (t_{-1}) and ex-post (t_1) models, giving unsupported evidence for hypothesis H_{1a} that conjectures the higher the degree of the board of directors effectiveness, the lower the probability of auditor changes. In particular, this result is consistent with GCC client firms changing their auditors in reaction to and in anticipation of changes in the effectiveness of the board of directors. Auditor change occurs in the GCC in anticipation of changes (t_{-1}) in the board of directors effectiveness more than in reaction to changes (t_1) in the board of directors effectiveness. This finding is reflected in the descriptive statistics (Table 2).

Table 4: Logit analysis results – Auditor change (Model 1)

Variables	Expected Sign	Pre-Auditor-Change Model $1_a(t_{-1})$			Post-Auditor-Change Model $1_b(t_1)$		
		Coef.	z	P> |z|	Coef.	z	P> |z|
Corporate Governance Mechanisms BDE_SCORE	+	2.01	1.70	0.089	2.72	2.33	0.020
ACE_SCORE	+	-0.53	-0.48	0.628	-1.14	-0.92	0.359
Control Variables							
GOV_OWN	+	0.17	0.64	0.520	0.12	0.44	0.657
FAMILY_OWN	+	-2.49	-2.23	0.025	-3.06	-2.50	0.012
DOMESTIC_OWN	+	-1.10	-1.35	0.177	-1.14	-1.50	0.134
FEE	+	0.21	1.02	0.307	0.16	0.82	0.414
LASSET	+	-1.10	-4.13	0.000	-1.08	-4.10	0.000
ROA	+	0.01	0.43	0.670	0.03	1.20	0.230
LEV	+	0.02	1.92	0.055	0.02	1.76	0.079
MGT_CHANGE	+	-0.35	-0.88	0.378	-0.02	-0.05	0.963
Log Likelihood			-97.013			-97.377	
Hosmer-Lemeshow			0.399			0.343	
Chi^2 (10)			30.26			32.31	
Prob > Chi^2			0.000			0.000	
Nagelkerke R^2			23.3			22.1	
Coxsnell R^2			16.1			17.1	
Pseudo R^2			13.4			14.2	
Correctly Classified (%)			65.12			67.44	
No. of Observations			172			172	

All p-values are one-tailed significance; Bold = significance at 1%, 5% and 10%.

The result could indicate to the importance of behavioral issues and culture of board of directors in corporate governance that inevitably have substantial impacts on the development of financial markets that fosters independent auditing (Haniffa and Hudaib, 2006; Woodworth and Said, 1996) in a manner that the higher the board of directors effectiveness, the higher they become unsatisfied

with the previous auditors' services. So that they change either to a higher audit quality or they remain with the same audit quality level as 62% of the sample size remained with the same audit quality level and 20% changed to a higher audit quality level. If this is the case, the result could lead to accept the prediction of integrating economic theory (agency theory) and behavioral theories (managerial grid theory and attraction-selection-attrition) as a better proxy for the board of directors effectiveness perceived by client firms to reduce the agency conflicts by enhancing the effectiveness of behavioral and monitoring functions and providing advice (Agrawal and Knoeber, 1996; Cai et al., 2009; Ward et al., 2009). Therefore, this result gives support to the argument of Beattie and Fearnley (1998) that auditor change is based heavily on the economic theory (agency theory) ignoring the behavioral issues of audit clients which, consequently, a partial explanation is only provided concerning audit change behavior.

Another possible explanation could be related to frequent unseen events such as the need for additional services, disagreements over accounting and auditing issues, poor working relationship with audit partner/staff, personality clashes with audit partner/staff, change of personnel on audit team assigned to company and inadequate communication between audit team and company personnel. All these issues may lead to high frequency of auditor change. In this regard, a possible interpretation for this circumstance is that the theories as associated with auditor change are still incomplete. Another possible interpretation is that political intervention and family relationship influence the domination of concentrated ownership that can weaken the board's ability to perform its governance role by being effective in controlling, monitoring and addressing the various agency problems. So that, for a consistent element between the control of the company's board of directors and its ownership structure, the same corporate owners is often members of the board. These boards are impacted by the fact that Arab firms have been influenced by the historical and cultural heritage that has been brought into the firm the colonial status and Bedouin traditions. Therefore, there is a high degree of hierarchical authority and patriarchal method that encourages Arab managers to exhibit nepotism in selecting their counterparts (Chahine and Tohmé, 2009). Similarly, Aljifri and Moustafa (2007)'s empirical findings revealed that generic Arab firms do not select their board members in an optimum way which may result in lack of coordination, communication and to issues of decision making. These practices discourage internally initiated improvements of the effectiveness of corporate governance practices including the demand for high audit quality.

The next justification could be attributed to the fact that corporate governance mechanisms are a substitute to each other instead of being complementary in the context of GCC countries. From the perspective of the substitution hypothesis,

board of directors as an internal corporate governance mechanism and auditing as an external corporate governance mechanism act in a substitution. The higher the effectiveness of the board of directors, the less significance devoted to the external auditor since the majority of auditor changes have taken place among the same audit quality classification (Big 4 to/from Big 4) that dominate GCC audit market. This stems from the fact that Arab owners who are board members exhibit power on the board in carrying out their monitoring objectives. Another justification can be linked to the Arab financial markets which are characterized as under-developed as compared to the Western markets based on many key aspects including regulatory frameworks, regulatory enforcement and markets for corporate control (Chahine and Tohmé, 2009). More specifically, lack of concentration was dedicated to the auditor selection process by the codes of corporate governance in GCC firms as these codes are still a novelty and hence, their complete implementation in business markets is impossible. Their optimum practice depends on time and experience. Additionally, these attitudes and practices are promoted by GCC governments and are realized through many legislations and government decrees. GCC governments view the situation on the basis of the tribal system as invaluable for their political stability where tribal attitudes and loyalty are held in high value (Abdel-Halim and Ashour, 1995; Ali and Azim, 1996).

Audit committee effectiveness: The results of the logit regression show an insignificant association between ACE_SCORE and auditor change for ex-ante (t_{-1}) and ex-post (t_1) models, giving unsupported evidence for hypothesis H_{2a} that conjectures the higher the degree of the audit committee effectiveness, the lower the probability of auditor changes. It is documented that auditor change is not one of the audit committee's primary responsibilities in GCC context. Therefore, the role played by both board of directors and audit committee in terms of making an auditor change decision is a substitutable action and not a complementary function. One interpretation as explained earlier that there is a close alignment between the company's ownership structure and the control of its board of directors. Therefore, the board of directors is the common apex of the decision control system in which auditor change is one of them. Regarding this issue, the role of audit committee in auditor choice process is slim to non-existent (Al-Moataz and Basfar, 2010). It is also revealed that the concept of audit committee is still in its infancy in GCC business environment and serious ramifications for non-implementation of code of corporate governance are absent. Additionally, the audit committee's duties, objectives, its concept of independence and its scope are still ambiguous and its most significant function is merely the nomination of the external auditor and the justification of the criteria used for this nomination. There is also a lack of academic and professional qualifications among the members of

the audit committee in a sense that it becomes a hindrance in coping with the increasing developments. In GCC countries, some firms did not succeed in laying down comprehensive guidelines identifying the audit committee's function (Al-Qarni, 2010). This finding clashes with the prediction of the economic theory and the behavioral theories integration and point to the less significant behavioral problems and culture in the responsibilities of the audit committee (Haniffa and Hudaib, 2006; Woodworth and Said, 1996).

As for the control variables, the logit regression reveals an insignificant association between government ownership GOV_OWN and auditor change. This is consistent with the substitution and not the complementary function of the relationship among the governance mechanism (government ownership vs. board of directors effectiveness and audit committee effectiveness). Among the many plausible explanations to this is that in GCC countries, a high degree of political stability is sought after. Hence, greater levels of transparency and public attention to auditor switches by the majority shareholders may reveal political favors of different shades of legality. Accordingly, governments take control over firms in exchange for supporters' votes, political contributions and bribes. Furthermore, great levels of government ownership give rise to an array of agency issues concern ineffective corporate governance directly result in adverse performance of the firm and eventually, minimal demand for independent auditing to produce quality accounting information (Wang et al., 2008). These conditions stem from the non-existence of the principal, the ineffective monitoring of agents and the government's political influence upon decisions of corporate dealings. In this regard, several board members representing the government's interests are nominated and remunerated by the local government based on their administrative rankings and not their performance (Zhou and Wang, 2000), and in turn, lackluster managerial ability to monitor management's adverse behavior. Despite the agents of governments being equipped for the task of oversight of corporate dealings, they lack a strong incentive to motivate effectively owing to the minimal impact of the companies' performance to their tenure and career prospects.

The next possible justification would be that the government investments may have certain social and economic goals that go beyond the generic profitability and, therefore, they possess governance systems distinct from ownership patterns. Government investors' aim may not be to improve the shareholders' value but instead they may have non-commercial objectives which may affect the demand for high audit quality and the frequency of auditor change. Viewed from an accounting perspective, their controlling ownership interest translates to the government-entity owners' capability of controlling the production of a firm's accounting information and its reporting patterns. Owing to the present regulatory profit requirement

for additional capital rising by listed companies, government owners have strong motivations to force managers to display positive earnings with little concern for audit quality (Chan et al., 2006). Additionally, contrary to other group of investors, the government holds sufficient power over the public in terms of whatever information is required from the listed companies. The absence of dependence on publicly released financial performance results decreases the government's requirement for independent auditing. Consequently, a contrary influence would be employed to the decision of auditor change.

In terms of family ownership, the sign of the coefficient of the FAMILY-OWN is negative in ex-ante (t-1) (p-value = 0.025, one-tailed significance) and ex-post (t1) (p-value = 0.012, one-tailed significance) models, implying that the higher the percentage of family ownership, the less likely the probability of auditor change to occur. This result is in line with the view of Jensen and Meckling (1976) and, empirically, Carey et al. (2000b). Specifically, this result indicates to the fact that client firms in the GCC change their auditors in reaction to and in anticipation of changes in the family ownership. This finding also reveals that the association among corporate governance mechanisms in making a decision related to the auditor change (family ownership vs. board of directors and audit committee effectiveness) is a substitution and not a complementary. With regard to the domestic corporate ownership, the sign of the coefficient of the DOMESTIC_OWN is negative in ex-ante (t-1) (p-value = 0.177, one-tailed significance) and ex-post (t1) (p-value = 0.134, one-tailed significance) models, implying that the higher the percentage of domestic corporate ownership, the less likely the probability of auditor change to occur. This group of owners applies their monitoring role to the company's management in making the auditor change decision. There are professionals and the cost of their monitoring role is significantly low.

As for audit fee FEE, an insignificant result has been reported for the both periods; ex-ante and ex-post (t-1: p-value = 0.307; t1: p-value = 0.414), suggesting that there is no association between audit fees and the likelihood of auditor change. This result has also been exhibited in the descriptive statistics (Table 2). One explanation is that the Big 4 audit firms dominate GCC market. They may have comparable reputation and they charge comparable audit fees. So that the majority of the auditor-change cases (i.e., 62%) have taken place among these audit firms. As a consequence, no significant differences have been captured among auditors of the same class. Another possible justification lies in the setting of GCC countries where audit fee is not viewed as a significant determinant linking to the decision of auditor change. Firms may be inclined to steer away from auditor change and its related direct and indirect costs for mere economic benefits when comparing it with other considerations like the provision of credible information to investors and creditors (Johnson and Lys, 1990; Schwartz and

Menon, 1985) and/or gaining a greater market value than the current value (Gregory and Collier, 1996). Owing to the presence of changing costs, it is logical that various studies have revealed that long-term business relationships are the preference of industries with complex and tailored products or services. Alternatively, in light of the lower audit fees charged by Big 4 audit firms for the auditor scale economies (Francis, 1984) or the lack of differentiation in the audit fees charged by Big 4 and their counterparts (Simunic, 1980) and their presence in GCC market (Binder, 2009), there is a lack of variation in the audit fees paid by auditor as well as non-auditor change companies.

As for firm size LASSET, a negative and significant association has been found with the incidence of auditor change for the both periods; before (t_{-1}: p-value = 0.00, one-tailed significance) and after (t_1: p-value = 0.00, one-tailed significance) the auditor change. The negative sign is contrary to the expectation and the conjecture of the agency theory, suggesting that the larger the firm size, the lower the probability of auditor change. This result also implies that client firms in the GCC change their auditors in reaction to and in anticipation of changes in firm size in a comparable manner. This result is inconsistent with the previous studies' findings (Haskins and Williams, 1990; Johnson and Lys, 1990; Woo and Koh, 2001), but is consistent with Krishnan et al. (1996). This result may indicate to the desire of GCC companies of retaining their auditors as they become larger due to the fact that Big 4 audit firms dominate the market. This result may also reflect the market power; the three dominant groups that are controlling the market and owning the largest companies, namely; government, family and domestic corporations. The organizational structure of these companies is designed to reflect a high degree of close alignment between the owners and the decision control system which has been supported by a less legal enforcement and high degrees of family and friendship relationships. This is an important environment for GCC countries to have a political stability. Therefore, these circumstances may be mirrored in the decision of auditor change that is based on friendship, business relationships and social networks. Schwartz and Menon (1985) document that the test result in terms of firm size and auditor change in their study may be influenced by the sample of firms included in the model which may not be representative of the size distribution of the population of all firms. With support to this, first, the current study includes only the companies that have met the criteria of auditor change and, second, only listed companies in the GCC are included which represent large and the largest of medium-sized companies. Therefore, it is expected that small and medium-sized companies, in the GCC, may be more effective in making decisions (i.e., auditor change decision) out of the influence of the business and culture networks. This is particularly because they are more exposed to the market discipline.

As for the firm performance ROA, insignificant association has been documented for the both periods; ex-ante and ex-post (t_{-1}: p-value = 0.670; t_1: p-value = 0.230), implying that there is an insignificant impact of the level of company's performance on the incidence of auditor change. This finding is also reflected in the descriptive statistics (Table 2). This result does not support the prediction of the agency theory and information suppression hypothesis, but, empirically, it is consistent with Lee et al. (2004), Williams (1988) and Woo and Koh (2001). This result may be interpreted by the perceived audit quality by the different variety of companies in terms of profits achieved (Aljifri and Moustafa, 2007). Another interpretation is that healthy companies are less likely to change auditors because there would be no pressure stemming from the financial distress that can put a strain on auditor-client relations producing irreconcilable differences (Schwartz and Menon, 1985). In this study, the mean (median) of ROA for the fully sample included in the auditor change model is 9.60 (9.11) for the ex-ante period and 7.90 (7.92) for the ex-post period, indicating that GCC companies concerning performance are healthy. In addition, Schwartz and Menon (1985) have indicated that there is a positive association between the changes in the companies' financial conditions and the changes in the auditing packages demanded. In the setting of the GCC, no substantial changes have been reported in the financial conditions by the GCC companies (t_{-1}: 18%; t_1: 13%). Furthermore, complex business uncertainties have not been reflected in GCC companies' financial conditions such as receiving qualified audit opinion. As a consequence, financial performance of GCC companies may not lead to the probability of auditor change. These circumstances are born out of the insurance hypothesis.

With regard to the leverage LEV, a significant effect on the auditor change has been reported for the both periods; ex-ante and ex-post (t_{-1}: p-value = 0.055; t_1: p-value = 0.079, one-tailed significance). The sign of the coefficient (+) indicates that a higher level of leverage is associated with a higher probability of auditor change. This result is in line with the prediction of the agency theory and it is empirically consistent with DeFond (1992), Eichenseher and Shields (1989) and Woo and Koh (2001). This suggests that GCC client firms change their auditors in reaction to and in anticipation of changes in the degree of leverage. As for management change MGT-CHANGE, an insignificant association has been reported between management change and auditor change in either period; before (t_{-1}: p-value = 0.378) and after (t_1: p-value = 0.963) the auditor change, indicating that the incidence of auditor change in GCC countries is not driven by the management change. This result is inconsistent with the prediction of the agency theory. This finding is also reflected in the descriptive statistics (Table 2). One possible explanation is that Arab management attempts to associate with the prior auditor relationship especially when the changes are taken

places among the same classification of audit quality. Another interpretation is that the new management may be satisfied with the quality of past services provided by the company's auditor, as well as with the cost of the audit (Hudaib and Cooke, 2005). This result is consistent with that found by Chow and Rice (1982), Schwartz and Menon (1985) and Williams (1988). This suggests that GCC companies, on average, do not select their board members optimally which may lead to lack of coordination, communication and decision-making problems (Aljifri and Moustafa, 2007).

5. Conclusion

The objective of this study is to identify the determinants associated with auditor change. It extends the existing work on auditor change to the GCC context. The study examined the board of directors effectiveness and audit committee effectiveness on the propensity of auditor change based on the agency theory, managerial grid theory and attraction-selection-attrition framework. The empirical results of logit regression concerning the test hypotheses suggest only board of directors effectiveness is found to have an association with the incidence of auditor change. Audit committee effectiveness is not related to the propensity of auditor change.

As for the board of directors effectiveness and auditor change, the association is reported to exist both preceding and subsequent to the auditor change. This result suggests that GCC client firms change their auditors in reaction to, and in anticipation of, changes in the effectiveness of the board of directors. This refers to the substitution function of board of directors effectiveness and external auditors. This could also indicate insufficiency with the current services offered, or it could be related to recurrent hidden events. Therefore, this result points toward the importance of cultural matters and the integration of economic and behavioral theories (agency theory, managerial grid theory, and attraction-selection-attrition framework) in the setting of the GCC in explaining the behavior of auditor change. They represent a better proxy for board of directors effectiveness as perceived by client firms to reduce agency conflicts by augmenting the effectiveness of monitoring and providing advice. A potential justification for this result could also be attributed to institutional theory, in which the different institutions of the GCC, such as the governance of concentrated ownership, are often affected by political connections and family involvement. This can deteriorate the board's ability to perform its governance role by controlling, monitoring, and addressing various agency problems. In terms of the audit committee and propensity for auditor change, the result does not support the inclusion and integration of economic and behavioral theories (agency theory, managerial grid theory, and attraction-selection-attrition framework). These corporate governance

mechanisms (board of directors effectiveness vs. audit committee effectiveness) act as a substitute for, rather than as a complement to, auditor change.

Limitations of the study lie, first, on the auditor change model where the model is developed focusing on establishing a relationship between the board of directors effectiveness and audit committee effectiveness with the incidence of auditor change. Although a statistically significant association is found, implication of this research design is that the auditor change model is only able to demonstrate an association not a causal relationship. Second, the auditor change and corporate governance data in this study covers only three years—the period spanning 2005–2010—which may not be generalized for other before-and-after periods. Generalizing the results of this study to other years should be seen with some attentiveness. Third, the quality of the results can be judged based on the quality of the sample data. Our sample is designed based on certain criteria (see section 3) which indicates to a possibility of excluding some major auditor-change companies from the sample. Therefore, the results are valid only to the extent that the sample is representative of the population. Forth, Kuwaiti firms have been excluded from the sample because of poor disclosed corporate governance information. Finally, the existence of some internal corporate governance mechanisms does not necessarily serve as a proxy for the quality of governance. For example, audit committee presence in some companies might be more "image management" than serving any real monitoring purpose. Therefore, controlling for more prior variables is significant in this case in predicting auditor change.

Following the limitations highlighted above, there is a possibility of extending future examinations to other country settings that have comparable features and business environments to those of the present study, in order to determine its validity in different environments and time periods. For example, the family name of the CEO and board members. The results of this study can be displayed by more powerful tests as a large sample companies are included from different countries. Additionally, a longer longitudinal study may better analyze the association between corporate governance and auditor change. On the other hand, comparative studies with other MENA countries might provide further insight to the theory proposed in this study. Moreover, future studies may replicate this study using non-listed or small-sized companies. The sample should also include both large and small auditees to enable a researcher to ascertain the level of competition in the market. In addition, future studies might examine the differences of board and audit committee effectiveness in demanding audit services between family and non-family businesses. This might shed the light on the practices of corporate governance in countries where concentrated ownership in the hands of family members dominates the business environment.

One important implication of these findings relates to the issue of auditor independence in the GCC. The GCC government, stock market, and accounting and auditing regulators would gain some new insights from this study in terms of the extent to which regulations, laws, decrees, and resolutions are implemented by both auditees and auditors. The results of this study would benefit banks in the way that they can assess the creditworthiness of incorporating companies in GCC region. The numbers incurred in the audited financial statements are based on mandated bond covenants. Moreover, credit decisions made by lenders are determined based on audited financial statements. Therefore, audit opinions are of the utmost important for any lending institution. Investors and financial analysts depend on audited financial statements to make decisions related to bonds, bond rating, interest rate, and all other decisions related to investments in GCC market. Accordingly, increased understanding and prediction of companies' events is important to this user group.

All types of audit firms would benefit from an increased understanding of the audit environment in the GCC setting. This opportunity would help them in assessing the propriety of continuing their current strategies and policies to attract new clients and, therefore, enhance the positive strategies and policies and correct the negative ones. For instance, the audit firm may take decisions to adjust its audit proposal, change the audit team or staff, and/or to make any other reasonable adjustment that would increase its chance to stay with the existing client and attract new ones. Further, the results of this study will be of interest to the researchers and academic community due to a lack of formal research body addressing the issues of auditor change in the GCC and, therefore, this study will provide substantial information about issues in the market of GCC to count on, in the future, as premise data.

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