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IFRS innovation, governance practices and firm performance: A new empirical assessment of moderating effects across GCC region

JEL Classification: *M40; Q58; G31; M41; G18; N15*

Keywords: *IFRS innovation; governance practices; firm performance; Saudi listed firms; Gulf Cooperation Council countries (GCC), International Financial Reporting Standards (IFRS)*

Abstract

Research background: Despite the large volume of research which has been conducted, the association between corporate governance mechanisms and firm performance remains a controversial issue, particularly with the growth of accounting settings around the world.

Purpose of the article: This study assesses the moderating role of International Financial Reporting Standards (IFRS) on the association between corporate governance mechanisms and firm performance in selected Gulf Cooperation Council (GCC) country-listed firms, namely Saudi Arabia, Qatar, Bahrain, and United Arab Emirates over the period 2016–2019.
Methods: Importantly, we examine the direct and indirect influences of royal family members on long-term firm performance. We attempt to answer our research questions using robust estimation methods such as pooled OLS, fixed effect, random effect and first difference models.
Findings & value added: The outcome reveals a significant and positive impact of firm size and board size on the firm performance in the pooled sample, while there is a significantly negative influence of financial leverage on firm performance. The impact of RFP on FP is seen to be negative and significant while the interaction term is found to be positive and statistically significant. This notably refers to the possibility that royal family directors could play an essential role in influencing the executive management team to fully react to provide extensive voluntary disclosure and comply with IFRS adoption. Our simultaneous quantile regression analysis displays the influence of corporate governance mechanisms on firm performance in various stages. While we observe that IFRS transformation has improved information comparability, policy makes in GCC countries should continue to foster conducive environment to support innovative business practices that help diversify their economies.

Introduction

The problems caused by the global economic crisis in 2007 resulted in many nations applying the strict corporate governance practices on global companies (Pillai & Al-Malkawi, 2018). This included the passing of the Sarbanes-Oxley Act of 2002 (SOX) by the USA, and the formation of the Public Company Accounting Oversight Board (PCAOB) in an attempt to prevent and detect future fraudulent conduct (Boyle *et al.*, 2015). In 2003, the International Financial Reporting Standards (IFRS) were introduced, providing a common accounting language on their financial statements that are reliable and consistent across companies and countries. One of the major issues concerning financial reporting quality is to provide an extensive and comparable disclosure as a means of raising the confidence of foreign investors in the quality of financial reporting. Theoretically, a number of hypotheses exist in an attempt to articulate the relation between firm performance and governance practices. The isomorphism, which is the key component of institutional theory, suggests that a company should be seen as legitimate and to align with international settings. Although there are many theories (such as agency theory, stewardship theory and stakeholder theory) that exist to help examine this relation, there is a need to empirically (re)examine the causal effects among these key variables given differ-

ences in cultural and economic settings that may influence the possible dynamic links.

Shleifer and Vishny (1997) simplified the meaning of corporate governance by stating that this term refers to the manner in which a supplier of finance ensures a return on their investments. Since the last financial crisis, the world has recovered and implemented various strategies to address any red flags in the future. Yet, due to the impact of the COVID-19 pandemic, the economy activity around the world has significantly contracted. The accounting performance in many global firms experienced massive issues during the pandemic (Fu & Shen, 2020). For instance, the pandemic lockdown in Saudi Arabia resulted in a 7% reduction of in the Gross Domestic Product (GDP) compared to the baseline level. In response to the pandemic, Gulf Cooperation Council (GCC) countries imposed several restrictions such as minimizing the movement of people, banning travel for its citizens, and closing international borders. Recently, accounting standardization has become a central issue for governments, capital providers, prudent investors, international organizations, and enforcement agenesis (Lungu *et al.*, 2017). Several international organizations, such as the United Nations, the World Bank, and the World Trade Organization (WTO) are involved in attempts to harmonize accounting practices (Márquez-Ramos, 2011). The International Financial Reporting Standards (IFRS henceforth) refer to the globally accepted accounting standards credibility. The aim of IFRS is to standardize the financial reporting of firm via a single set of a higher-quality accounting settings, and to furnish obvious information with greater disclosure (Cheung & Lau, 2016). Prior empirical studies furnish supporting evidence regarding the association between corporate governance and firm performance in both developed and emerging markets. However, to the best of our knowledge, no research has investigated this relation between the IFRS adoption period in the context of GCC countries. This is worthy of investigation, because the vast majority of IFRS studies examine the transition and implementation period rather than measuring the dynamic impact of this adoption on accounting and economic consequences of the changes. This study measures this relation in emerging markets, such as Saudi Arabia and other GCC countries, including United Arab Emirates (UAE), Qatar, and Bahrain

To obtain accurate and robust results, this paper applies various econometric techniques with particular attention to the multicollinearity and diagnostics issues facing panel data and cross-sectional approaches. As the

objective of this research is to investigate the moderating effect of IFRS, the first estimation will be used as a means of measuring the moderating impact of IFRS for the first period of adoption except in the case of Saudi Arabia. This approach is useful to run the first differences to estimate the relation among prior variables. According to Albulescu (2015), the dynamic first difference estimation strategy is appropriate to point out the association, possibly even in the absence of a long-run co-integrating relationship. The year of IFRS adoption in many GCC countries is not exactly known, and it is difficult to apply two separate panel data groups. However, in the case of Saudi Arabia, it is possible to apply two separate periods as the year of adoption is before the year of 2017.

This research contributes to the existing literature on international accounting and governance mechanisms by providing a timely empirical investigation on moderating assessment(s) of IFRS, to further enhance our understanding of the level of IFRS compliance in different regions. Importantly, this analysis will contribute to our understanding of how IFRS innovation and its adoption have impacted or improved information quality. More critically, it should be noted that many recent studies have pointed out that the impact of IFRS adoption vary across countries and that such dynamic relationship could be impacted by cultural factors (see Cascino & Gassen, 2015; Jang *et al*., 2016). Furthermore, this paper is arguably a new source by which to compare firm performance with other GCC countries such as Saudi Arabia and UAE. Unlike other empirical studies (Fallatah & Dickins, 2012; Ahmed & Hamdan, 2016; Khalifa *et al.*, 2020) conducted in the GCC context that only cover the non-financial sector, the present research covers both non-financial and financial sectors to capture the impact on all the firms listed by adopting the IFRS. The current analysis assesses the moderating role of IFRS on the relation between corporate governance and firm performance which has been rarely covered in the literature on IFRS impact of emerging markets. With respect to the key objective of this paper, this investigation aims to assess the moderating role of IFRS in selected GCC countries while considering homogenous institutional settings.

More broadly, it should be noted that the empirical research on this topic has mostly focused on one single country and scant attention has been paid to GCC stock markets, hence various issues related to corporate governance reforms have not been previously answered. One of the key issues that has been overlooked in selected GCC countries is that of the moderating role of IFRS on firm practices. In this investigation, we chose several

GCC countries, namely Saudi Arabia, Bahrain, the UAE, and Qatar to determine the association between corporate governance and firm performance considering the IFRS adoption period for the following reasons. Firstly, GCC countries have many characteristics in common with other countries such as culture, economics, politics, and institutional settings (Alqahtani *et al.,* 2020). Secondly, the political and cultural ties in GCC countries are strong, due to the fact that these countries are deeply influenced by the civil law legal system (Pillai & Al-Malkawi, 2018). Thirdly, foreign direct investment (FDI) inflows into GCC countries account for more than 55% of total FDI inflows into the Middle East and North Africa (MENA) region (Saidi & Prasad, 2018). Figure 1 shows the FDI inflows of the selected GCC countries (Saudi Arabia, Qatar, the United Arab Emirates and Bahrain). Hence, GCC countries are a very important union and are one of the biggest producers of the world's oil (Siriopoulos *et al.,* 2021). This study can be generalized to other countries that are looking to adopt new accounting settings. Furthermore, GCC countries are implementing future innovations to escape from their heavy reliance of oil such as EXPO 2020 in the case of UAE, FIFA 2022 in the case of Qatar, and vision 2030 in the case of Saudi Arabia and Bahrain. These innovations demonstrate the importance of selecting GCC countries as a case study for any future experimental investigation.

Our study theorizes that the group of elites such as royal families in GCC region play a vital role in posing the board of directors to fully comply with IFRS adoption as a means of improving the firm performance. Furthermore, the board directors of GCC listed firms have a unique feature such as the high percentage of royal family representation which enables them to engage in social life and governmental affairs. Recently, foreign investors are inclined to invest in a company that have a percentage of royal family as this group are able to mitigate the conflict of interests and manger's misbehaviours. Hence, the royal families in GCC board of directors have a significant influence on decisions process of these firms, particularly with firm performance (Alazzani *et al.,* 2019). Unlike the developed markets in either western or eastern region, the emerging markets such as GCC region are meant to increase the confidence of investors by showing the interactive role of royal families in board of directors' level.

Overview of the economic growth and technology in GCC countries

This research is motivated by several considerations that make GCC countries unique case study. First, science and technological innovation have been recent developmental themes in the process of economic growth in GCC countries and one of the essential aspects of developing countries over the last decades. Second, the GCC countries are leading Arab region that pay attention for their technological advancement, which is pivotal for achieving economic growth and sustainable development goals. Third, GCC region are the producers and leading consumers of oil and are trying to play a significant role in enhancing their energy efficiency by enabling high technology processes in their economic activities. Fourth, technology innovation in IT industries has raised since the GCC countries launched the blockchain technology as a means of raising the technology awareness and acceptance of its population. Various emerging technologies platforms have been planned or launched including data science, artificial intelligence hubs, and cloud computing as the main drivers of financial and banking industries and investment activities in the GCC region (Alabbasi & Sandhu, 2021; Ashfaq & Ayub, 2021; Waheed *et al.*, 2021). These key technological changes are targeted to enhance business environment in GCC countries, improve information and accounting quality and contribute to the economic diversification and private sector participation. Recently and, in regard to Saudi Arabia as one of the biggest GCC countries, Saudi vision (2030) upholds the role of technology in various sections. For instance, it targets to increase the governmental contributions to technology-related sector to 50% by the year of 2030. The vision also aims to mitigate challenges confronting foreign direct investment, improve corporate business connections and enhance women participation in the digital economy. All these will reduce information asymmetry and foster accounting and financial reporting environment. In September 2022, Saudi Arabia reaffirmed the importance of artificial intelligence and smart technology as critical elements that will shape future decision making and influence business practices and investment volumes. These milestone reforms are aimed at improving information flow and attracting international corporate bodies to relocate to Saudi Arabia as their international hub in Middle East Region. Moreover, Saudi Arabia provides high flexibility to manufacturing sector as an effective mechanism of diversity the domestic economy. Likewise, the UAE plays a critical role in attracting international firms that has supported

years of technological transfer. For instance, many of the leading technological firms in the world have long been operating from the city of Dubai. This includes Microsoft, Google, Toshiba and Samsung. Also, the UAE is leading nation for global shipment industry. Although the vast majority of international industries have recently moved to Saudi Arabia and specifically in the city of Riyadh, the UAE still houses high volume of multinational corporations with a significant international workforce and expatriates in the region. Many of the UAE cities have set targets for Smart city-smart life. Nevertheless, technology innovation in GCC reflects the importance of this region in global economy. Qatar, Bahrain and other GCC region are the largest nations that invest in Blockchain technology for the benefit of their financial institutions and information sharing. These information centrepieces will help these countries to escape from the trap of manipulation and system tampering. Notably, the economic growth and technology have interlinked with IFRS adoption. IFRS leads to higher quality of financial reporting; therefore, there is an expected growth of economy. On the other hand, technology is a part of financial reporting quality that led to provide a timely information flow. GCC countries have the uniqueness of these characteristics in technology that makes this context strong case study. Moreover, eXtensible Business Reporting Language (XBRL) is widely recognized across GCC countries and several GCC countries will no longer accept paper statements as a part of audit procedures in future.

GCC countries have unique cultural dimensions compared with developed nations. Hofstede (2011) categorizes cultural dimensions into various groups: long-term orientation power distance, masculinity, individualism, uncertainty, indulgence and avoidance. The author indicates that GCC countries such as Saudi Arabia, Qatar, and the United Arab Emirates have a high-power distance which is higher than developed nations, such as the United States of America and the United Kingdom. The societies of GCC countries are varied and there are different in some common factors such as the religion but the capital markets of GCC countries have a similar culture which enables them to uphold the quality of disclosure and transparency in their financial reporting (At-Twaijri & Al-muhaiza, 1996; Baatwah *et al.*, 2020). Figure 2 illustrates the level of cultural dimensions extracted from the Hofstede model in Saudi Arabia, Qatar, and the United Arab Emirates. The figure excludes the case of Bahrain as its culture is not known and has not yet been measured. Given the importance of culture in

governance practices, many empirical studies exhibited its vital role on firm performance. For instance, Frijns *et al* (2016), document economic impact of culture on boards which is one of key elements of corporate governance mechanisms. In contrast, GCC countries provide an ideal context for more robust analysis of macroeconomic country level.

The economic impact of IFRS in GCC countries

Notwithstanding all the costs incurred for the purpose of IFRS compliance, there are massive benefits of IFRS innovation that can be observed in the financial and capital markets of the adopting countries. While examining 208 developed and emerging countries, Gordon *et al.* (2012) notes that IFRS adoption leads to a net increase in capital inflows that are critically needed in emerging economies. To rise investor's veil through enhancing confidence in financial reporting, IFRS adoption results in the reduction of information asymmetry and enhances the quality of accounting information system. In the case of Saudi Arabia, which is the biggest economy in GCC union, there are massive benefits that can be mentioned. This includes the potential to increase in capital diversification in this economy which heavily reliant on oil. IFRS also supports market transparency and fosters the opportunity for attracting portfolio flows (Nurunnabi, 2018). Several empirical investigations (Chen *et al.,* 2015; Beneish *et al.,* 2015; Lungu *et al.,* 2017) document the role of IFRS in enhancing the accounting information quality and global convergence. However, not only does IFRS reduce information asymmetry, but also impacts business sustainability and good measures of 'doing business' in adoptees through enhancing trustworthiness of financial and accounting data. Mameche and Masood (2021) report that IFRS improves market liquidity as FDI inflows increase by 3% across GCC countries in the short run through reducing uncertainties related to decision making. According to International Monetary Fund (IMF, 2018), GCC countries are one of the regions the show continued reforms in governance and transparency. Generally, IFRS innovation are critical in reducing agency costs and enhancing financial and accounting infrastructure to support cross-border business growth.

This paper undertakes an empirical analysis to address the main research question which is to assess the moderating role of IFRS adoption on the dynamic relationship between corporate governance and firm performance in selected GCC countries.

The remainder of this paper is organized as follows. The subsequent section briefly reviews the literature on firm performance, corporate governance and IFRS adoption. Section 3 details the research methodological framework and data used. Section 4 discusses the key findings of the research. Section 5 conclude this research, provide policy implications and highlights on potential future research avenues.

Theoretical background and literature review

The most common theory to explain corporate governance and firm performance is agency theory. This theory highlights the conflict of interest between the principle and agent. The authors of this theory (Alchian & Demsetz, 1972; Jensen & Makling, 1976; Eisenhardt, 1985) discuss many aspects of firms and the relation between the agent and principle which is the cornerstone of this insight. Alchian and Demsetz (1972) explore the procedures of the central agent authorizing between the firm's owner and employer and the manner in which board members can enhance the efficiency of term production in organization. They argue the importance of agency theory in production, information costs and economic organization. To understand the agency problem, there is a need to discuss the agency theory in literature in various forms and costs involved to minimize the problem continuously (Panda & Leepsa, 2017). According to Sajnóg and Rogozinska-Pawelczyk (2022), the most important underlying foundation of the agency theory is the incentive orientation which affects executives reward systems and shareholders' wealth maximization, which also works to align the goals of management and interest of shareholders. The authors relied on this perspective to examine financial performance of Polish listed firms, findings that the Anglo-American assumptions might not be suitable for the realities on much of the world. Furthermore, Tawfik *et al.* (2023), indicate that agency problem reduces if the vast majority of board directors are independent. These authors articulate that corporate governance has played an essential role in reducing the agency problem and inefficiencies. Therefore, such enhanced institutional settings will lead to better firm performance, over time.

Another theory which is discussed in the literature is stakeholder theory. Taking agency theory and stakeholder theory as points of departure, Hill and Jones (1992) proposed a paradigm that helps explain the following: (1) a firm's strategic behaviour and its certain aspects (2) the structure

of management-stakeholder contracts; and (3) the form of institutional structures of oversight that focus on the contracts between mangers and other stakeholders. Kend (2015) relied on stakeholder theory to examine the association between firm-level characteristics and governance characteristics including: the production and assurance of standalone sustainability reports based on the company choice. This study provides an insight into sustainability reports and market share which reflect the importance of using stakeholder theory to enhance the credibility of fiscal reports. Although these theories have been used in various accounting and finance studies, another important theory has since emerged. By employing institutional work to highlight the power dynamics and practices within the accounting domain, Aburous (2019) examined the social dimension of implementing IFRS in an emerging nation by embarking institutional work to highlight on the power practices and dynamics within the accounting realm. The author documented that limited IFRS training is relevant to insight how and why firm accountants engage in institutional work, as it rises their reliance on auditors and shifts power in favour of the latter. Adegbite (2015) argues the engagement of company in good governance practices in an international business environment. The author relies on institutional theory as opposed to agency theory to cover his argument through considering the context (African), efficiency (instrumentality) and legitimacy (symbolic). The author also takes into account the importance of using the institutional analysis as a means of understanding the behavior of company in a weak institutional context.

Several key studies raise various arguments in relation to institutional theory and its efficiency in organizations and explain managerial aspects faced by firms (DiMaggio & Powell 1983; Fogarty, 1996; Lounsbury, 2008; Meyer & Allen, 1997). Meyer and Allen, (1997) argue that after industrial society, formal structures of numerous organizations reflected the myths of their institutional environments instead of the demands of their work activities. Further, they argue that the formal consistency resulted from environmental domains with greater number of rational myths. They argue that environments and environmental domains which have institutionalized a greater number of rational myths result in a more formal organization. Dimaggio and Powell (1983) rely on the components of institutional theory such as isomorphic processes-coercive, mimetic, and normative to determine the impact of other characteristics on isomorphic change. The authors argue that an isomorphism component of institutional theory may interpret

the observations that homogeneity of organizations become more than usual, and that elites often obtain their manner. In meanwhile, an isomorphisms component lets us to understand irrationality, the lack of innovation and frustration of power that are so commonplace in organizational life.

Furthermore, Fogarty (1996) applies institutional theory in order to perceive peer review and the issues of professional self-regulation. The author believes that this theoretical template challenges the more conventional interpretations offered by the accounting profession. Lounsbury (2008) highlights that there is a persistent need to understand the neoinstitutionalism as a theory of isomorphism because that the institutionalists have modified the study of organizational heterogeneity. This study also argues that it can be particularly fruitful if the institutionalists focus on institutional rationality in the form of multiple, competing logics. However, if the proposed study uses IFRS adoption as a moderator variable to moderate the association between firm performance and corporate governance mechanisms, institutional theory is an appropriate structure to target the research objective. With respect to dependent variables, agency theory provides insight into corporate performance and corporate governance. To the best of our knowledge and ceteris paribus, the vast majority of firms in GCC countries and in particular, Saudi share an equivalent institutional setting and hence this theory may have the similar effect on all firms. To sum up, these two theories might be useful for measuring macroeconomic impact rather than microeconomic influences.

The vast majority of empirical studies provide diverse conclusions on the impact of corporate governance on firm performance. Haniffa and Cooke (2002) argue that the impact of corporate governance on firm performance may vary between the developed and emerging market due to the economic, cultural, and social aspects. The system of corporate governance plays a role in enhancing firm performance. Furthermore, several developed markets follow the Anglo-American model[1] which enables shareholders to engage in the decision making of the firm. Nevertheless, different models are applied other developed and emerging markets including the Japanese model and the German model (Lane, 2003). Boachie

[1] This model has been adopted by the United States, the United Kingdom, Australia, and the majority of Commonwealth countries. This model recognises shareholder rights and gives shareholders the right to elect all members of the board of directors, vote on their compensation and the strategies applied by the top management (see Goergen & Renneboog, 2008).

and Mensah (2022), in particular, examine whether the relationship between firm performance and earning management is moderated by best-corporate governance practices. After conducting robust diagnostic tests, including dynamic endogeneity, simultaneity, and observed time-invariant heterogeneity, they found that strong corporate governance led to a positive link between earning management and firm performance. Numerous studies highlight the positive and negative impact of corporate governance mechanisms on firm performance in developed markets. The following studies examine corporate governance (Wernerfelt & Montgomery, 1988; Klein, 1998; Vafeas, 1999; Bhagat & Bolton, 2008; Dalwai *et al.*, 2015; Pillai & Malkawi, 2018; Alruwaili *et al.*, 2023) and shed light on various themes, including board committee structure, audit committee structure, and board meeting frequency. These studies rely heavily on three measurements of firm performance: return on asset (ROA), return on equity (ROE), and Tobin's Q.[2]

Several studies suggest various measurements of corporate governance such as INDEX and governance characteristics. One of the most important studies to use various governance indexes is the study by Bhagat and Bolton (2008), who measured the relation between corporate governance and firm performance thoroughly and found a positive relation between corporate governance and firm performance in long-term stock returns. The authors employed various governance indexes to anticipate the effect of these mechanisms on operating firm performance. On the other hand, Brown and Caylor (2004) stated that some corporate governance characteristics are strongly associated with weak performance. The author addressed several characteristics that are strongly associated with firm performance, such as nominating the committee and board composition. Researchers and practitioners are inclined to use specific characteristics to measure governance and its effect on firm performance. For instance, Wintoki (2007) argued whether board size has an impact on firm performance in the U.K., and the findings revealed the strong negative impact on firm performance. Also, another argument by Orlitzky (2001) discussed whether firm size confounded the relation with firm performance. The study concluded that

[2] Tobin's Q formula equals the market value of a company divided by its assets' replacement cost (See Wernerfelt & Montgomery, 1988). This measurement is very useful in experimental studies that aim to measure firm performance but the availably of data in the GCC context is limited.

larger firms could influence the relation with firm performance, and this can be used as control factors in many empirical financial studies.

In the case of GCC countries, few empirical studies have been conducted in GCC countries such as Saudi Arabia (Boshnak, 2021); Kuwait (Al-Shammari & Al-Sultan, 2009); Bahrain (Ahmed & Hamdan, 2016); and UAE (Al-Gamrh *et al.*, 2020). Pillai and Al-Malkawi (2018) investigated the relation between governance and firm performance on all GCC countries and found several governance characteristics such as audit type, board size and leverage had an obvious effect on firm performance. Likewise, Ahmed and Hamdan (2016) found corporate variables had a significant impact on firm performance. However, Boshnak (2021) found a deterioration between firm performance and corporate governance characteristics such as board size, the CEO role duality, and concentration. The author indicated firm performance decreased with greater board size based on the logic of agency theory. Al-Shammari and Al-Sultan (2009) show that board size significantly positively impacts firm performance in the case of Kuwait.

This literature review therefore highlights the theoretical and empirical debates on the association between firm performance and corporate governance. Nevertheless, there is a lack of evidence showing the moderating impact of IFRS adoption on this relation. IFRS adoption results in many enhancements to stock markets. Ball (2008) identifies the positive impact of adopting IFRS and the quality of accounting information is increased after the year of adoption. Also, Armstrong *et al.* (2010) discuss many of the benefits of adopting IFRS in the European Union, such as the positive reaction of foreign investors, lower information asymmetry and a higher level of transparency.

Research methods and data

This research focuses on the moderating effect of IFRS adoption in the association between firm performance and corporate governance mechanisms in selected GCC countries, namely Saudi Arabia, Bahrain, the UAE, and Qatar. For our analysis, we will utilise the annual reports of listed companies during the period in which all firms were required to prepare their financial statements in accordance with IFRS requirements. This is expected to improve firm performance and level of reliability. To investigate the moderating role of IFRS on this relation, we obtained comprehen-

sive annual reports of 280 selected listed firms in GCC countries during the 2016–2019 period. This provides a total of 963 observation data to aid our investigation. The sample is gathered from the official website of selected GCC stock markets (further details of the data are outlined in Table 1). Econometric analysis is applied to test the association among these variables consistent with the extant literature (Pillai & Al-Malkawi, 2018; Farhan *et al.*, 2017). This paper relies on all the firms listed in selected GCC countries and covers the period between 2016 and 2019, thereby providing data of 1120 observations extracted from the annual reports for each country. In this empirical analysis, we have three categories of variables: dependent variables, independent variables and moderating variables. Using firm performance as a dependent variable can provide a thorough understanding of corporate determinants related to corporate governance mechanisms. This research measures firm performance using the most common measurement: return on asset (ROA) for the Saudi context. Regarding the other GCC countries, namely UAE, Qatar, and Bahrain, several variables are excluded in this research as there was a data limitation on the variables and there was not enough data available through official stock channels. Hence, this research relies heavily on ROA as a dependent variable, due to the fact that all the companies must provide this as a window into firm performance. The rest of the independent variables, namely firm size, leverage, board size, and audit type will be regressed with firm performance (ROA) as independent variables. The vast majority of variables are collected manually, and the rest are based on international platforms such as Capital IQ. Furthermore, there are few limitations of data regarding of other GCC countries such as: Board meetings frequency (MEETING) that are not found in the majority of annual reports. Unlike other studies conducted in the MENA context, this study does not exclude financial listed firms, as we study the impact of IFRS adoption while utilising both non-financial and financial firms in emerging markets. Table 1 provides the details.

Following Farhan *et al.* (2017), this paper investigates the moderating effect of IFRS adoption in selected GCC countries where corporate governance mechanisms are proxied by variables such as board size (*SB*), CEO duality (*CEO*), financial leverage (*LEVE*), and audit quality (*BIG4*). Several firm-specific characteristics are used as control variables such as firm size (*SIZE*) and capital investment (*INVES*). The variable definitions and the source are given in Table 2.

While examining the moderating role of IFRS adoption in relation to the association between firm performance and firm-specific characteristics, we take four out of six GCC countries with a growing political influence and stronger socio-economic reforms, namely Saudi Arabia, the UAE, Qatar, and Bahrain. Oman and Kuwait are excluded from this panel, because they have recently adopted IFRS or due to luck of data availability. Importantly, it should be noted that these four countries have been adopting certain level of economic reforms to enhance their competitive edge through digital revolution and unlock investment opportunities for sustainable development.[3] Given our panel data, let us start with a general model as:

$$y_{it} = x'_{it}\beta + a_i + u_{it} \tag{1}$$

where X include our time-varying regressors, i is the number of cross-sections, t is the number of time periods and u_{it} is the idiosyncratic" error term. To account for time-invariant heterogeneity and other possible omitted variable bias we have firm fixed term a_i. While considering changes over time, our first difference model can be represented as:

$$\Delta y_i = \Delta x'_i\beta + \Delta u_i \tag{2}$$

The above first difference model will help us to address heterogeneity issues and to remove time constant elements where $E(\Delta x_i, \Delta u_i) = 0$. More specifically, we assume an initial panel data model as:

$$FP_{it} = \alpha_0 + \beta' X_{it} + \varepsilon_{it} \tag{3}$$

where i is company identifier and t is year identifier. To examine the key determinants of firm performance in selected listed firms in GCC countries we have the following country-specific equations, where we also allow a number of interaction effects to investigate moderating effect of various variables on host performance as:

$$FP_{it} = \alpha_0 + \varphi_1 X_{it} + \delta_2 IFRS_{it} + \gamma_3 X_{it} * IFRS_{it} + e_{it} \tag{4}$$

[3] see Morar *et al*. (2019) for further discussion on digital revolution in GCC.

where, in this set-up, γ indicates the strength and direction of interaction between IFRS and other X key variables whereasφ and δ denote the main/primary effects. Model 4 estimates the moderating effect of IFRS experience (IFRS) in the association between firm performance and corporate governance mechanisms in case of Saudi Arabia. In this model, we key variables and interaction terms of IFRS with firm size. There are many variables applied in this regression, and due to the limitation of variables of other GCC region, we focus in subsequent equations on other corporate governance mechanisms namely: percentage of royal family (RFP), and firm age (AGE). Hence, our first ordinary least squares (OLS) and other panel data types as follow:

$$FP_{it} = \lambda_0 + \beta_1 IFRS_{it} + \beta_2 SIZE_{it} + \beta_3 SB_{it} + \beta_4 LEVE_{it} + \beta_5 BIG4_{it} + \beta_6 INVES_{it} + \beta_7 CEO_{it} + \beta_9 X_{it} * IFRS_{it} + \zeta_{it} \quad (5)$$

where:

I	firm identifier;
t	year identifier;
FP	firm performance measured by the return on asset *(ROA)*;
SIZE	firm size;
SB	board size;
LEVE	financial leverage;
BIG4	audit quality
INVES	capital investment
CEO	CEO duality
IFRS	dummy variable
ς	the error term.

Through X* IFRS, we will allow interactions between IFRS and a number of key variables (such as INVES and RFP). This empirical investigation carries out a number of sensitivity analysis test to demonstrate robustness of our results. Models 4 and 5 illustrate the interaction of IFRS experience with specific variables such as: (*SIZE), (INVES) and (AGE)*. We further consider the effect of royal family (*RFP*) board membership on firm performance in GCC since these countries have strong monarchy systems that may exert some influence on publicly listed firms. This is to test partial influence on firm value. We separately furnish a through analyses of selected GCC firms by examining the interaction terms of IFRS experience with collective sample. Due to better availability of more comprehensive data in our case, we consider more variables in our estimation for Saudi Arabia as:

$$FP\_SA_{it}=\alpha+\beta_1 IFRS_{it}+\beta_2 SIZE_{it}+\beta_3 SB_{it}+\beta_4 LEVE_{it}+\beta_5 BIG4_{it}+ \\ +\beta_6 INVES_{it}+\beta_7 CEO_{it}+\beta_8 RFP_{it}+\beta_9 AGE_{it}++\beta_{10} SIZE * IFRS_{it}+ \\ +\beta_{11} AGE * IFRS_{it}+\beta_{12} RFP * IFRS_{it}+\beta_{13} LEVE * IFRS_{it}+\varepsilon_{it.} \quad (6)$$

In Model 6 we provide an outline that targets interactions of IFRS with key variables such as SIZE, AGE, LEVE, and RFP. These variables are eclectic for many reasons. Initially, SIZE, AGE, and LEVE are used as control variables for many empirical investigations of corporate performance (Al-Shammari & Al-Sultan, 2009; Pillai & Al-Malkawi, 2018; Nasser, 2019; Al-Enzy *et al.*, 2023). According to Pérez-Cornejo *et al.* (2019), firm size is one of the essential characteristics affecting the firm's resources and visibility. Hence, these variables play a critical role in this relation. Second, the percentage of royal family (RFP) is new phenomena and recently used as a moderator among corporate studies. Given above all the prior facts, our following regression as a follow:

$$FP\_GCC_{it}=\alpha+\beta_1 IFRS_{it}+\beta_2 SIZE_{it}+\beta_3 SB_{it}+\beta_4 LEVE_{it}+\beta_5 BIG4_{it}+ \\ +\beta_6 INVES_{it}+\beta_7 CEO_{it}+\beta_8 RFP_{it}+\beta_9 AGE_{it}+\beta_{10} SIZE * IFRS_{it}+ \\ +\beta_{11} AGE * IFRS_{it}+\beta_{12} RFP * IFRS_{it}+\beta_{13} INVES * IFRS_{it}+\pi_{it.} \quad (7)$$

Prior model refers to the ordinary least squire (OLS) in various estimations, the following model is used as a means of controlling of autocorrelation, heteroscedasticity and endogeneity. Following Al Nassar *et al.* (2020) who relies on *xtbond2* command in Stata software to control CG variables, our last model as a follow:

$$\Delta FP_{it} = \psi \Delta FP_{i,t-1} + \Delta X_{it}^{'} \vartheta + \left(\lambda_{it} - \lambda_{i,t-1}\right) \quad (8)$$

where instrument variables can be used to address the correlation issues and that $E(\Delta X_{it} \Delta \lambda_{it}) = 0$. Here ΔFP_{it} is important difference from the transformation which implies that this model is consistent as compared to OLS and can be obtained using 2SLS with instrumental variables that are both correlated with the change of dependence of $\Delta \psi_{it}$. As usual, we utilize various diagnostic tests as part of prior analysis before our empirical testing (Beggs & Chapman, 1988). Two types of diagnostics tests are common. The first one is related to outliers, normality, and multicollinearity, and the second type is applied on the panel data to test the autocorrelation and heteroscedasticity issues. Appendix A reports the outlier data from selected

GCC countries with the help of an ivr2 plot. The outliers display the nature or distribution of data except in the case of Qatar which has an obvious variance. As indicated by Ayyangar (2007), the parametric tests are valid unless the errors are normally distributed. This test is based on the property of normal distributions that assume variance for every density (Yazici & Yolacan, 2007). An analysis of the various influencing factors (VIF) is reported in Table 3 to ensure there is no multicollinearity. The mean of VIF is the highest in the case of Qatar at 3.23 and the lowest in the case of Saudi Arabia at 1.11. Also, the mean of VIF is lower than 10 which means the data from the selected GCC countries are not heterogenetic. According to Tabachnick and Fidell (1996) the percentage of high correlation should be no more than 1 so that the collinearity problems are related to each other. The correlation matrix confirms the absence of high correlation (not reported). On the other hand, there can many econometric challenges with cross-sectional data before attaining a reliable and robust empirical evidence. Presence of heteroscedasticity, through affecting the calculated standard errors, can be a challenge in estimating causal effects. Baltagi (2008) indicates that heteroskedasticity occurs when the time variance is constant. Furthermore, the regression of cross-sectional data is limited by unit and time variance, especially when these elements are the same value. The determinants of heteroskedasticity including the function of regression, the presence of outliers in the data, insufficient and incorrect data. Table 4 reveals that data from Saudi Arabia, UAE, Qatar, and Bahrain signal heteroskedasticity problems. Hence, there is a need to apply various econometric techniques such as first difference estimation to conceal any autocorrelation issues.

Major findings and discussion

We initially provide descriptive statistics of all the variables employed in this panel to point out the spread and trend of data for conformity. Appendix B reports the number of observations for each selected GCC country and the key statistics values for each summary variable. Table 4 reports the outcome of the panel data analysis of the general model developed for the selected GCC countries based on *ROA* as a measurement of firm performance. Table 4 indicates that there is a negative relation between firm performance *FP* and financial leverage *LEVE*, while the rest of the variables

such as board size *SB* and CEO duality are found to be positive and significant in the case of the pooled sample of selected GCC countries. Notably, the CEO duality shows a statistically significant and positive coefficient in all the collective samples of the GCC, except in the case of Saudi Arabia, which refers to a negative association. This negative association is consistent with prior studies (Cornett *et al.*, 2008; Rashid, 2018), which support the conflict of interest described in agency theory where the role of the CEO can have a negative impact on firm performance. However, the relationship between CEO duality and firm performance is subject to the firm category (e.g., family firms or non-family firms). Furthermore, neither agency theory nor stewardship theory provides an obvious explanation as to the expected outcome. On the other hand, CEO duality can be critical in monitoring the company and understanding the operation activities. Elsayed (2007) reports a positive and statistically significant coefficient for CEO duality when the firms have a low performance. Our results indicate a negative and statistically significantly relationship between IFRS and firm performance (*IFRS*; β= -1.386*** which is based on 837 observations). Although GCC countries have a lower experience of IFRS and high-quality local accounting standards (since they are all implementing US GAAP), IFRS adoption may not provide a significant change after adoption. This is in line with a number of previous studies (Blanchette *et al.*, 2011; Vein *et al.*, 2018) that found no significant association between IFRS and firm performance in many emerging markets. As indicated by Barniv *et al.* (2022), longer experience of IFRS tend to lead to better harmonization and reduce the learning curve in preparation of financial statement. This will also lead to timely earnings forecasts. In benchmark analysis of GCC countries, Table 5, 6, 7, and 8 report a negative association between firm performance and IFRS and which are significant in the case of Saudi Arabia. We expect the same sign for all GCC countries as long as these countries have the similar institutional settings. A significantly positive sign is found between the size of board and firm performance in all GCC countries as indicated by Table 4. Moreover, the results indicated by the regression analysis in Table 5 and Table 6 confirm that positive relationship. However, in the case of Qatar, the UEA, and Bahrain, the relationship remains negative and statistically significant, in line with various empirical results (Conyon & Peck, 1998; Bozec, 2005; Yermack, 1996; Wintoki, 2007). Needless to say, this relationship is subject to various considerations such as the number of observations, the econometric models, and the time period. For instance, Wintoki

(2007) investigates more than 16,000 observations in the USA and employs various econometric models such as OLS/FE/GMM, and reporting a negative association between *SB* and *FP*. On the other hand, Adams and Mehran (2005) find a significantly positive impact between *SB* and *FP* in the same context of the USA. Furthermore, a large board may have more of an impact on firm performance than a small board. Appendix B provides the maximum number of board size across GCC region.

Unlike prior empirical investigations, this research tests the relation in the collective sample of all the selected GCC countries and separately for each stock exchange. In the case of Saudi Arabia and as shown in Table 5, our results display a negative and statistically significant relationship between firm performance and financial leverage *LEVE*.[4] With respect to the size of the board *SB*, we see a positive coefficient for this variable in the years after IFRS adoption (post IFRS adoption model). The first difference estimation shows a significant result between firm performance and financial leverage, firm size, and capital investment (LEVE, SIZE, and INVES). This confirms the possibility of having moderating role to influence the association between IFRS and firm performance, which will later be tested further. Looking at the magnitude of coefficients, firm size has the most positive impact on firm performance *FP* in all the selected GCC countries except in the case of Bahrain and Qatar. Moreover, it has a positive impact in the pre-post IFRS adoption period in the case of Saudi Arabia. Capital investment *INVES* has a significantly positive impact on firm performance via fixed effect analysis at 1%, although we, surprisingly, see a negative coefficient in Table 4. This means that several GCC listed companies unwisely lay out their money and overleverage as a means of gaining the profit, therefore; they may be giving up on many the growth opportunities. Nevertheless, we do not see any significant results in the case of the UAE market. The audit quality *BIG4* appears to have a positive influence firm performance across GCC group. The quality of financial reporting in the cases where firms are audited by one of the big four is expected to be high. While other GCC countries such as Saudi Arabia, Bahrain, and the UAE shows a negative coefficient for audit quality variable, while only Qatar shows a positive sign. Furthermore, the impact of financial leverage LEVE

[4] It should be noted R square results tend to be lower in cross sectional datasets (estimations) relative to time series data analysis. Although our R square seems to be lower, it ranges between 5.5% to 17.7% in Tables 5 and 6, which is quite common in the literature (see Baltagi, 2008).

on firm performance is negatively documented in all GCC countries. Our mixed finding here is consistent with Chen and Wang (2004) and Azeez (2015), who indicate that the impact of leverage on corporate performance is either negative or not robustly significant in any way.

As a means of undertaking a robustness test, we interact IFRS experience with corporate governance mechanisms, seeking to know the moderating effects of IFRS on the link between key control variables and firm performance across the GCC region. In doing so, and as shown in Table 10, IFRS experience refers to the negative impact on the firm performance in all GCC region except the case of Qatar. Al-Enzy *et al.* (2023) indicates that IFRS experience in GCC countries labels as *learning curve* which means this region requires substantial time to engage with the IFRS standards. In addition, most GCC nations had a high level of disclosure and strict accounting standards that ensure the low level of information asymmetry (Al-Shammari *et al.,* 2008). Furthermore, we find mixed evidence for the moderating effect of IFRS on the relation between firm performance and firm size. In terms of GCC pooled sample, the negative coefficient of SIZE (coefficient = -0.041, p=0.98) is consistent with prior empirical studies in Al-Enazy *et al.* (2023) and Al-Dhamari and Ismail, (2015). However, the moderating effect of IFRS confound the relation between firm size (SIZE) and firm performance (FP), referring to positive sign (coefficient = 0.022, p=0.040). This means that larger firms in the GCC region have a longer experience of IFRS and any other international settings, and this experience may enhance the firm performance. Furthermore, larger firms are able to gain external funds, while smaller firms should improve their disclosed information to obtain the funds. Table 9 shows that there is a positive relation between firm size and firm performance across GCC region and significate in case of Saudi Arabia. However, in the case of Bahrain the relation remains a negative and this is due to that fact that Bahrain has the smallest firms in GCC region. Indeed, IFRS experience confound this relation as indicated by the Table 9, and the relation between firm size and firm performance across GCC region was negatively at (*SIZE*; β= -0.041), while after IFRS interaction change positively at (*IFRS* * *SIZE*; β= 0.022). This means that IFRS experience enhance the information disclosure and reduce the asymmetric issues, therefore, lead to better firm performance. Our findings are relevant and supported by Lenger *et al*. (2011) who indicates that the negative interaction of IFRS could be more severe in small firms than public firms. The sign for each GCC countries is similar, expect in the case

of Qatar. This result is justified that Qatar has many issues of data outliers, though they have a longer experience of IFRS adoption than other most of GCC countries in this investigation. In respect to capital investment *INVES*, we find that the relationship with firm performance remains a positively significant across GCC region, as shown in Table 9 and 10. While the interaction term of moderating impact of IFRS shows a negative sign (*IFRS* * *INVES*; β= -0.335***), this notably suggests that IFRS experience will cost the firm additional expenses to fully comply with new this setting and adopt changes. In other words, the firm will deep into their capital to bear additional fees such as hiring experts and training their employee to fully comply with IFRS requirement. From another prospective, adopting IFRS increase the capital investments inflows, which means that the company will be able to attract more foreign investors to increase their capital base. This is consistent with the findings by Brüggemann *et al.* (2012) and Louis and Urcan (2014), who argue that IFRS may have a positive impact on flow of investment into firms in post changes.

Table 10 document that the association between firm age and firm performance is negative. We anticipate a positive impact in older firms as indicated by Garnsey *et al.* (2006), who states that the firm age plays a critical role in firm sustainability. However, in the case of GCC, several firms have a complex environment and institutional settings. Yet, the interaction term of IFRS on firm age turns up to be positive across GCC pooled sample, as shown in Table 10. This implies that older firms are able to adopt to the new challenges than younger firms. The interaction between royal family percentage (RFP) and IFRS experience (IFRS) in Table 10 shows to have a positive impact on firm performance, but this result is significant at 5% level (*IFRS* * *RFP*; β=0.010**). Given the fact that the royal family members on the board may reduce the misbehaviours of mangers, the findings are also consistent with the findings of recent studies (Alazzani *et al.*, 2019). The power of elites group in company boards rarely show a low performance of firms, and this is because royal family directors have the powerful influence to attract government contracts, lower the cost of debt, and reduce the chances of conflict of interest. When the company has a royal family member on the board who are committed to the changes resulting from IFRS, it is likely that this will foster the firm's performance. While supporting this argument, our interaction terms IFRS*RFP is positive and significant. Moreover, and in case of IFRS adoption stage, royal family directors are so keen to monitor any effective strategy of enhancing the level

of transparency and disclosure such as IFRS adoption. All of these factors will undoubtedly influence the prospect of a firm's performance.

Table 11 provides our simultaneous quantile regression of a firm's performance in the selected GCC countries in various degrees from 2016 to 2019. Quantile regression is one of the most common tests developed by Koenker and Bassett (1978). In the first analysis reported in this paper, we run specific models following Pillai and Al-Malkawi (2018) and Farhan *et al.* (2017) to capture the association between a firm's performance and corporate governance mechanisms considering the new accounting regime. Secondly, we run the first difference model to estimate the relation among prior variables. This is supported by a more recent study Albulescu (2015), which indicates that first difference estimations may be used to point out the association in the absence of a long-run cointegrating relationship. Nevertheless, we expand this view by going beyond estimating the conditional mean effect of firm performance on corporate governance traits. As illustrated in Table 11, the outcome suggests sufficient variation and consistent robust observation across all our four breakpoints where we consider significance level of at least 10%. Our firm's performance levels have been subject to four breakpoints since 2016. Prior analysis contains findings of the various quantiles benchmarks, namely the 25th, 50th, 75th, and 90th which follow for consistency. Following Zmami and Ben-Salha (2020) and considering the magnitude of the relationship and evaluating our key coefficients, it is obvious that the effects are heterogeneous. Notwithstanding this, however, the impact of corporate governance mechanisms is higher in a period of low firm performance where some of the key coefficients associated with firm performance are positive and statistically significant in quantile estimations. The results show obvious diversity and heterogeneity in the effect low, medium, and high ratio of a firm's performance.

To sum up, IFRS adoption confirms its critical moderating role in relation to a firm's performance and corporate governance determinants in many of our estimation, including the first difference analysis. Most importantly, the *R* squared ratio is varied across the selected GCC countries in the first difference estimation, being 0.1% in the collective sample, 0.14% in the case of Saudi data, 0.09% in the case of Bahrain data, 0.19% in the case of the UAE, and the highest in the case of Qatar with 0.39%. It can be seen that adopting new settings is consistent with institutional theory, where international harmonization may interfere in the legitimacy of the firm**.** Ben Salem and Ayadi (2022) state that countries are more likely under pressure

to coercive isomorphism to open in international economy; therefore, countries are encouraged to engage with international harmonization.

This study aimed to contribute to the timely discussion on the moderating effect of IFRS with various firm and governance characteristics on firm performance. Our findings have several implications for policy makers, managers, financial analysts, and the board of directors in the GCC region. Certainly, IFRS innovations have been critical in enhancing information comparability, fostering transparency, and improving quality of accounting information. Importantly, self-regulatory bodies such as stock exchanges in GCC countries can benefit from this research through developing a better understanding of the indirect impact of IFRS innovations and how this can support value relevance and better corporate decision making. In the case of Saudi Arabia and the UAE, the Saudi Centre of Governance and the Hawkamah Institute for Corporate Governance in the UAE can ponder on the moderating assessment of IFRS as an effective way to maintain the highest quality of governance and disclosure either in relation to the macrocosmic or microeconomic impact. The results from this research confirm the role of IFRS in the relation between corporate governance and firm performance which means that this confirmation may play a role in enhancing the level of integrity and transparency within financial company indicators. Governance reforms are recommended as part of the sustained influence of IFRS as a means of reflecting on the quality of the stock market with the direct integration of international settings. Areas that require further considerations in the adoption of IFRS over time remains on aspects on how IFRS reforms support better protection of investors. Our empirical results on country-by-country cases indicate that the impacts of IFRS in supporting better accounting standards are evident even in different markets with different institutional and legal settings within GCC region. Needless to say, our study provides insights and considers windows to conduct progressive investigations to highlight on social and economic dimension of IFRS transition to improve national and corporate value and information efficiency. Accounting professionals are encouraged to maintain available financial information and compare it under many circumstances facing the global market today, from the financial crisis in 2008 and to the ongoing influence of Covid-19 pandemic in the year of 2022. Most importantly, the result of this investigation aims to provide deep knowledge to practitioners and organizational managers as it furnishes recent empirical findings on the nature of the moderating role of IFRS as

GCC economies are strengthening their principle-based accounting process and financial reporting. An important note to the regulators is royal members' representation in company boards may be beneficial since our findings show a positive impact of percentage royal family directors (RFP) on firm performance in GCC countries with special attention on the IFRS experience. In particular, we believe our finding on royal family participation may support the extent and sustainability of voluntary disclosure. Our paper's methodological approach to examining the moderating role of IFRS in the association between firm performance and corporate governance mechanisms provides useful tools for regulators and policy makers such as SOCPA, QCPA, and AAA to consider indirect benefits of this transformation in proving forward looking information to investors. Finally, our analysis promotes further knowledge of the nature and comparability of the adoption of the international reporting standards which vary across emerging markets.

Conclusions

The prime motivation of this research is to assess the moderating effect of IFRS on the relation between firm performance and corporate governance mechanisms in GCC countries. This research examines the firm-level panel data of 963 observations distributed across several nations namely: Saudi Arabia, Bahrain, Qatar, and UAE from 2016 to 2019. The prime research statement of this study has been answered by running various econometric techniques such as pooled OLS, fixed effect, random effect and first difference estimations. These battery of estimation approaches have helps us demonstrate the robustness of our findings. The results confirm the moderating role of IFRS on the association between firm performance and corporate governance mechanisms in the pooled data and case by case analysis. More importantly, board size shows to have a significant impact in all the selected GCC countries except for Bahrain, even though this country has the highest number of board members compared to the rest of the GCC countries (as outlined in the Appendix B).

Interestingly, the effect of IFRS experience on firm performance in all GCC countries is negative and particularly significant in case of Saudi Arabia. Although the vast majority of GCC countries have the same institutional settings, Saudi Arabia has a unique characteristics and strong corpo-

rate governance code established by the Capital Market Authority (CMA) in 2006. It is likely we do not observe significant variation in the impact of IFRS in GCC counties since their local accounting standards prior to the adoption were similar settings, and they were already following the US GAAP. As far as we are aware, this is the first empirical investigation that covers unique variable such as royal family as key governance practice control across GCC region. In the GCC context, the impact of RFP on FP was significantly negative while the interaction term is found to be positive and statistically significant. This notably refers to the possibility that royal families' directors could play an essential role in influencing the executive management team to fully react to provide extensive voluntary disclosure and comply with IFRS adoption. Nonetheless, to provide extensive and robust implications, this paper undertakes country-specific tests using various estimation techniques, such as fixed effect, random effect, and second lagged regression and dynamic estimations. We conducted simultaneous quantile regressions to obtain a robustness result and check for the sensitivity across different economic condition and business cycles. IFRS adoption is an innovative phenomenon for emerging markets to improve information comparability, and empirical investigation targeting the GCC countries will support the adoption process in other frontier markets with similar economic and cultural settings. Given the strength of economic activities and potential for technological change, this region supports a claim of lunching many innovations business practices to diversify their economies from heavy reliance on oil and energy resources. As a leading region, GCC region have commitment economic transformation to align themselves with international settings such as principles of corporate governance from the Organization for Economic Co-operation and Development (OECD) and therefore providing various learning lessons for similar emerging markets.

The obvious limitation in this investigation is that it excludes two countries, Kuwait and Oman, where we had an obvious problem of data availability. We also accept the unavoidable limitation of a shorter time frame. It may be the case that a longer period could provide more stable results. Future research may consider audit committee characteristics such as audit committee size, meetings, and fees to enquire future dynamic relationships. Finally, it is worthwhile conducting corporate governance studies in the realm of influence accounting information system from IFRS to provide up

to date evidence from frontier markets which can be generalized to other emerging countries.

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Annex

Table 1. Distribution of targeted companies in other GCC countries/sectors

Across countries					
Country	**Saudi Arabia**	**Bahrain**	**UAE**	**Qatar**	**Total**
No. of listed companies	184	42	37	20	280
No. of first observations	736	168	148	80	1120
No. of final observations	663	154	92	54	963

Note(s): We cleaned our initial data using STATA system which eliminate all the observations that have more missing values.

Table 2. Variable definitions, labels, and measurements

Definition	**Measurement**
Dependent variable	
Firm performance (FP)	Net income to total assets ratio (ROA) is the proxy for firm performance
Independent variables	
Financial leverage (LEVE)	Total debt to total assets ratio
Board Size (SB)	Number of board directors
Audit Quality (BIG4)	1 if the company is audited by one of the big four firms, and 0 otherwise
CEO Duality (CEO)	1 if the chairperson assumes a CEO role and 0 otherwise
Royal Family Percentage (RFP)	The percentage of royal family in the board size in company
Firm age (AGE)	The year of firm establishment until the current study time period
Firm size (SIZE)	Natural logarithm of total assets
Capital investment (INVES)	Natural logarithm of the total investments by subtracting tangible assets with current assets divided by total assets
IFRS experience (IFRS)	IFRS is the number of years since a selected GCC mandatorily adopted the IFRS

Table 3. (i) Multicollinearity Test-VIF statistics

Country	**Mean VIF**
Saudi Arabia	1.11
Bahrain	2.87
Qatar	3.23
UAE	1.31
Collective Sample of Country	1.15

Table 3. Continued

(ii) Results for Heteroskedasticity Tests

Country	Breusch – Pagan Test
	ROA
	X2 [p-value]
Saudi Arabia	0.0000
Bahrain	0.0000
Qatar	0.1768
UAE	0.0020
Collective Sample of Country	0.0000

Note: Denotes statistically significant at the 1% level. We apply Breusch-Pagan test for heteroskedasticity.

Table 4. Benchmark regression of IFRS adoption in selected GCC countries (Saudi Arabia, Bahrain, Qatar, and UAE)

VARIABLES	(1) Pooled OLS	(2) Random Effect	(3) Fixed Effect	(4) 2Lagged reg
IFRS	-0.062	-0.217	**-1.386*** **	-0.060
	(0.102)	(0.137)	(0.340)	(0.118)
LEVE	**-0.308*** **	**-0.285*** **	**-0.248***	0.069
	(0.088)	(0.101)	(0.136)	(0.100)
SIZE	0.057	0.072	0.081	**0.217***
	(0.107)	(0.149)	(0.523)	(0.123)
INVES	-0.049	-0.048	0.056	**-0.222***
	(0.111)	(0.154)	(0.530)	(0.127)
SB	**0.552*** **	**0.573** **	0.582	-0.006
	(0.191)	(0.262)	(0.717)	(0.219)
BIG4	0.009	-0.438	-0.504	0.709
	(0.676)	(0.656)	(0.738)	(0.779)
CEO	**0.953***	0.662	0.453	0.777
	(0.499)	(0.483)	(0.540)	(0.569)
Constant	-0.753	-0.539	0.709	2.382
	(1.420)	(1.972)	(5.736)	(1.623)
Observations	873	873	873	851
R-squared	0.026		0.033	0.008
Robust	No	No	No	No
Number of id	237	237	237	237

Note(s): Variables are defined in Table 2, where ***, **, * denote significance at the 1%, 5% and 10% levels, **respectively**. This table reports on the collective sample of selected GCC countries to identify the relation between firm performance and corporate governance in the new regime of IFRS. This table applies various econometric techniques to gain unbiased results.

Table 5. Primary assessment of IFRS adoption (Saudi Arabia)

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	**Pooled OLS**	**Random Effect**	**Fixed Effect**	**2Lagged reg**	**Pre-IFRS adoption**	**Post-IFRS adoption**
IFRS	**-1.348*** **	**-1.445*** **	**-2.111*** **	**1.077** **	-	-1.208
	(0.479)	(0.391)	(0.395)	(0.499)	-	(0.986)
LEVE	**-1.000*** **	**-0.952*** **	**-0.630** **	**-0.457** **	**-0.754*** **	**-1.310*** **
	(0.182)	(0.205)	(0.261)	(0.189)	(0.269)	(0.249)
SB	**0.400***	0.344	0.168	**0.454***	0.112	**0.663** **
	(0.236)	(0.325)	(0.783)	(0.247)	(0.374)	(0.297)
BIG4	-0.483	-0.635	-0.387	-1.055	-1.061	0.054
	(0.822)	(0.749)	(0.783)	(0.858)	(1.384)	(0.998)
SIZE	**1.478*** **	**1.647*** **	**14.429*** **	**2.332*** **	**1.362*** **	**1.675*** **
	(0.239)	(0.337)	(2.305)	(0.573)	(0.391)	(0.300)
CEO	-0.342	-0.658	-0.637	1.139	-1.153	0.066
	(1.009)	(0.974)	(1.058)	(1.042)	(1.930)	(1.123)
INVES	-0.014	0.156	**6.025*** **	**-0.915***	-0.137	0.072
	(0.231)	(0.335)	(1.576)	(0.554)	(0.373)	(0.287)
Constant	**-18.332*** **	**-24.030*** **	**-338.607*** **	-6.715	**-12.313**	**-24.617*** **
	(5.964)	(8.628)	(49.197)	(6.212)	(9.619)	(7.553)
Observations	663	663	663	649	311	352
R-squared	0.094	0.131	0.142	0.050	0.055	0.136
Robust	No	Yes	No	No	No	Yes
Number of id	179	179	179	179	179	179

Note(s): This table reports the results of the panel data to investigate the association between firm performance and corporate governance mechanisms. Firm performance is the dependent variable and is measured by the return on asset (ROA) and corporate governance is the independent variable including board size, CEO duality and other control variables. The results are based on the yearly data for all listed firms in Saudi Arabia between 2016 and 2019 with special attention to the IFRS transition period after 2017. This table has various econometric techniques to identify the moderating assessment of IFRS between these variables. These models are fixed effect, random effect, and first difference estimation. Values in parentheses are robust standard errors; ***denotes significance at the 1% level; **denotes significance at the 5% level; *denotes significance at the 10% level. Please note that No/Yes notification indicate that we have used a Stata command that has enabled us to produce robust standard errors in our estimations.

Table 6. Basic regression on assessment of IFRS adoption (Bahrain)

VARIABLES	**(1)** **Pooled OLS**	**(2)** **Random Effect**	**(3)** **Fixed Effect**	**(4)** **2Lagged reg**
IFRS	-0.440	0.039	0.136	1.306
	(0.439)	(0.308)	(0.317)	(1.263)
LEVE	-0.071	-0.025	-0.003	-0.054
	(0.076)	(0.072)	(0.082)	(0.168)
SIZE	**-1.191** **	**-1.448***	-1.637	-0.103
	(0.533)	(0.768)	(2.897)	(0.163)
INVES	**1.410** **	**1.533***	1.617	0.130
	(0.571)	(0.854)	(2.195)	(0.175)
SB	-0.342	-0.290	0.114	(0.168)
	(0.309)	(0.484)	(3.175)	0.206
BIG4	-0.585	-0.710	-	0.334
	(1.191)	(1.886)	-	(2.642)

Table 6. Continued

VARIABLES	(1) Pooled OLS	(2) Random Effect	(3) Fixed Effect	(4) 2Lagged reg
CEO	**1.454*** **	**1.139*** **	**1.037*** **	1.025
	(0.368)	(0.303)	(0.327)	(0.802)
Constant	10.087	4.299	0.885	-24.673
	(8.979)	(9.816)	(56.134)	(16.985)
Observations	154	154	154	148
R-squared	0.177	0.033	0.089	0.036
Robust	No	No	No	No
Number of years	4	4	4	4

Note(s): Unlike the prior table, this table reports on the econometric analysis including ordinary least squares (OLS), random effect (RE), fixed effect (FE), and 2Lagged regression. The results are based on yearly data for all listed firms in Bahrain between 2016 and 2019 with special attention to the IFRS transition period after 2017. Standard errors are in parentheses at *** p<0.01, ** p<0.05, * p<0.1. – Means that the variable was omitted in our estimation.

Table 7. Benchmark regression on assessment of IFRS adoption (Qatar)

VARIABLES	(1) Pooled OLS	(2) Random Effect	(3) Fixed Effect	(4) 2Lagged reg
IFRS	-0.057	-0.186	-0.262	-0.148
	(0.342)	(0.169)	(0.181)	(0.440)
LEVE	**-0.413***	-0.058	-0.007	-0.322
	(0.210)	(0.350)	(0.509)	(0.291)
SIZE	-0.158	-1.318	-4.651	-0.378
	(0.689)	(1.320)	(5.357)	(0.936)
INVES	**1.382***	**3.914*** **	**5.613** **	**2.493** **
	(0.749)	(1.429)	(2.204)	(0.965)
SB	0.305	**-2.052*** **	**-3.630*** **	0.608
	(0.309)	(0.494)	(0.559)	(0.439)
BIG4	1.359	2.444		1.804
	(0.970)	(2.342)	-	(1.319)
CEO	1.310	-8.283		-
	(2.650)	(5.586)	-	-
Constant	**-27.152***	-34.977	112.768	-48.749**
	(15.089)	(25.929)	(84.323)	(23.995)
Observations	54	54	54	50
R-squared	0.457	0.111	0.600	0.2555
Robust	No	No	No	No
Number of id	15	15	15	15

Note(s): This table reports the data from the Qatar context showing that several variables are not significant compared to the other selected GCC countries. Diagnostic tests revealed the high multicollinearity and outliers in the Qatar case (see appendix A). The results are based on yearly data for all listed firms in Bahrain between 2016 and 2019 with special attention to the IFRS transition period after 2017. Standard errors are in parentheses at *** p<0.01, ** p<0.05, * p<0. – Means that the variable was omitted in our estimation.

Table 8. Panel data analysis and moderating assessment of IFRS adoption (UAE)

VARIABLES	(1) Pooled OLS	(2) Random Effect	(3) Fixed Effect	(4) 2Lagged reg
IFRS	-0.527	-0.663	-0.576	**3.402****
	(0.642)	(0.536)	(0.604)	(1.293)
LEVE	**-0.896*****	-0.511	0.250	0.127
	(0.248)	(0.322)	(0.479)	(0.492)
SIZE	**2.055*****	**1.973*****	0.348	-1.124
	(0.476)	(0.690)	(4.047)	(0.949)
INVES	0.451	0.444	-6.150	0.467
	(0.431)	(0.628)	(5.087)	(0.908)
SB	**-1.513****	**-2.081*****	-2.876	**2.222***
	(0.576)	(0.802)	(1.787)	(1.153)
BIG4	-2.105	-0.856	-	10.632
	(4.369)	(6.569)	-	(8.652)
CEO	-	-	-	-
Constant	**-40.183*****	**-35.846****	223.910	-11.376
	(12.526)	(17.410)	(161.810)	(26.221)
Observations	92	92	92	89
R-squared	0.234	0.115	0.118	0.138
Robust	No	No	No	No
Number of id	29	29	29	29

Note(s): The table shows the impact of corporate governance mechanisms on firm performance using return on asset (ROA) as a dependent variable. However, several variables are omitted from this panel due to collinearity issues. In addition, the first difference shows the impact of IFRS on the first period as this panel starts in 2016 and ends in 2019. Standard errors are in parentheses at *** p<0.01, ** p<0.05, * p<0. – Means that the variable was omitted in our estimation. – Means that the variable was omitted in our estimation.

Table 9. Interaction terms of IFRS experience across GCC region

VARIABLES	(1) Pooled Sample of GCC	(2) Saudi Arabia	(3) Bahrain	(4) Qatar	(5) UAE
LEVE	**-0.272*****	**-1.002*****	-0.066	**-0.414***	**-0.899*****
	(0.093)	(0.183)	(0.078)	(0.212)	(0.245)
SB	**0.646*****	**0.393***	-0.325	0.313	**-1.507*****
	(0.214)	(0.236)	(0.311)	(0.312)	(0.568)
BIG4	-0.165	-0.398	-0.694	1.354	-2.433
	(0.758)	(0.830)	(1.195)	(0.979)	(4.312)
CEO	**1.183****	-0.347	**1.434*****	1.320	-
	(0.459)	(1.010)	(0.373)	(2.676)	-
IFRS	-0.189	-4.191	-1.698	2.379	**-13.383***
	(0.430)	(3.883)	(3.763)	(7.096)	(6.997)
SIZE	-0.041	**1.320*****	-2.314	1.378	0.578
	(0.098)	(0.321)	(3.198)	(4.524)	(0.928)
*IFRS * SIZE*	0.022	0.192	0.066	-0.099	**0.568***
	(0.040)	(0.260)	(0.192)	(0.288)	(0.308)
INVES	0.050	-0.010	**1.426****	**1.381***	0.497
	(0.104)	(0.231)	(0.573)	(0.756)	(0.425)

Table 9. Continued

VARIABLES	(1) Pooled Sample of GCC	(2) Saudi Arabia	(3) Bahrain	(4) Qatar	(5) UAE
Constant	-2.599	**-16.058****	31.023	-64.125	-6.495
	(1.633)	(6.714)	(62.087)	(111.469)	(21.505)
Observations	562	663	154	54	92
R-squared	0.050	0.095	0.177	0.459	0.264
Robust	No	No	No	No	No

Note(s): This table identifies the effect of IFRS experience on the relation between corporate governance mechanisms and firm performance in GCC region and interacts the firm size as one of the most important control variables of firms. The outcome of this regression shows a negative impact of IFRS experience in all GCC region expect the cast of Qatar. – Means that the variable was omitted in our estimation. Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Table 10. Interaction terms of IFRS experience across GCC region

VARIABLES	(5) IFRS * SIZE	(6) IFRS * INVES	(7) IFRS * AGE	(8) IFRS * RFP	(9) All variables	(10) System Dynamic Panel-Data Estimation
SIZE	-0.117	-0.107	-0.053	-0.035	**-0.262****	0.905
	(0.087)	(0.082)	(0.093)	(0.095)	(0.115)	(0.877)
INVES	0.127	0.090	0.045	0.034	**0.239***	-0.815
	(0.097)	(0.084)	(0.096)	(0.098)	(0.123)	(0.878)
LEVE	**-0.590*****	**-0.524*****	**-0.763*****	**-0.665*****	**-0.811*****	-0.294
	(0.138)	(0.121)	(0.136)	(0.132)	(0.155)	(0.186)
SB	**0.635****	**0.792*****	0.283	0.350	**0.621****	-0.107
	(0.279)	(0.277)	(0.265)	(0.265)	(0.278)	(0.876)
BIG4	0.161	0.340	-1.306	-1.007	-0.046	0.066
	(0.800)	(0.790)	(0.800)	(0.828)	(0.830)	(0.988)
CEO	0.282	0.217	0.133	0.353	0.067	0.512
	(0.311)	(0.312)	(0.361)	(0.366)	(0.316)	(0.767)
AGE	-0.040	-0.021	-0.036	0.001	**-0.077****	0.308
	(0.026)	(0.024)	(0.028)	(0.022)	(0.030)	(0.304)
RFP	-0.026	-0.023	**-0.057***	**-0.136****	-0.084	0.014
	(0.030)	(0.029)	(0.033)	(0.059)	(0.060)	(0.579)
IFRS	-0.512	0.762	-0.099	-0.172	0.889	**-1.520*****
	(0.684)	(0.669)	(0.089)	(0.117)	(0.852)	(0.489)
IFRS × SIZE	0.048				**0.218***	
	(0.064)				(0.120)	
IFRS × INVES		-0.075			**-0.335*****	
		(0.065)			(0.118)	

Table 10. Continued

VARIABLES	(5) IFRS * SIZE	(6) IFRS * INVES	(7) IFRS * AGE	(8) IFRS * RFP	(9) All variables	(10) System Dynamic Panel-Data Estimation
IFRS × AGE			**0.006****		**0.007***	
			(0.003)		(0.004)	
IFRS × RFP				**0.010****	0.004	
				(0.005)	(0.005)	
FP_{t-1}						**-0.103***
						(0.061)
Constant	1.834	-0.280	5.966**	5.631**	5.291*	0.002
	(2.509)	(2.220)	(2.379)	(2.453)	(2.852)	(0.003)
Observations	116	116	143	141	113	423
R-squared	0.297	0.302	0.269	0.265	0.392	
Robust	No	Yes	No	No	Yes	Yes

Note(s): Unlike Table 11, this table identifies the moderating effect of IFRS experience on the relation between corporate governance mechanisms and firm performance in GCC region and interacts the CG variables to point out the effect on this relation. Further, this table uses a system dynamic panel-data to control diagnostic issues of data. The outcome of this regression shows a negative impact of IFRS experience in all GCC region expect the cast of Qatar. Please note that **No/Yes** notification indicate that we have used a Stata command that has enabled us to produce robust standard errors in our estimations. Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Table 11. Robustness test (Simultaneous quantile regression)

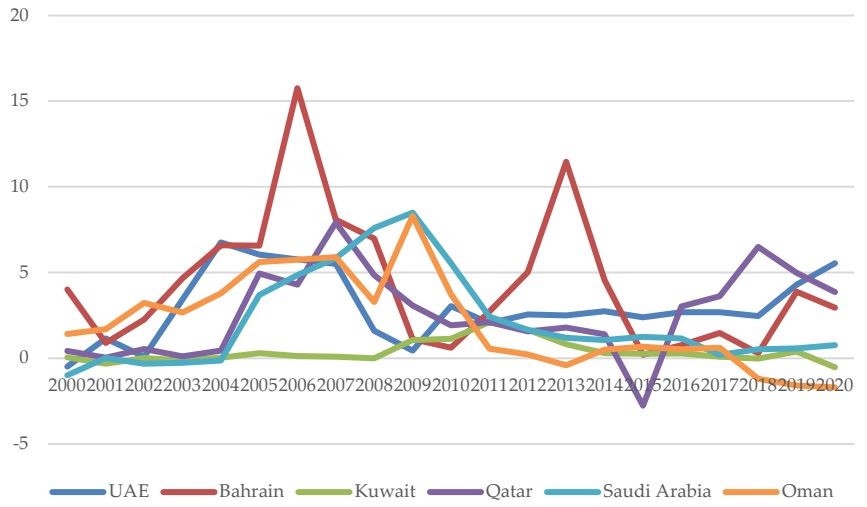
VARIABLES	(1) Quantile Regression 25%	(2) Quantile Regression 50%	(3) Quantile Regression 75%	(4) Quantile Regression 90%
IFRS	-0.906	-0.725	-1.448	0.329
	(0.572)	(0.759)	(0.910)	(1.452)
LEVE	**-0.289*****	**-0.385*****	**-0.758*****	**-0.694*****
	(0.095)	(0.127)	(0.152)	(0.242)
SIZE	-0.062	-0.115	-0.083	-0.192
	(0.063)	(0.084)	(0.100)	(0.160)
INVES	0.079	0.132	0.105	0.177
	(0.073)	(0.096)	(0.115)	(0.184)
SB	0.180	0.081	0.234	0.418
	(0.196)	(0.260)	(0.312)	(0.497)
BIG4	0.045	-0.190	0.131	-2.469
	(0.592)	(0.785)	(0.942)	(1.502)
CEO	0.045	-0.122	**1.242*****	0.067
	(0.221)	(0.293)	(0.351)	(0.560)
IFRS × SIZE	0.050	0.059	0.100	-0.082
	(0.057)	(0.075)	(0.090)	(0.144)

Table 11. Continued

VARIABLES	(1) Quantile Regression 25%	(2) Quantile Regression 50%	(3) Quantile Regression 75%	(4) Quantile Regression 90%
IFRS × AGE	0.002	0.001	0.004	0.011
	(0.003)	(0.004)	(0.004)	(0.007)
IFRS × RFP	**0.019*** **	0.005	**0.012** **	0.004
	(0.003)	(0.004)	(0.005)	(0.009)
AGE	**-0.037***	-0.003	**-0.075** **	**-0.104***
	(0.021)	(0.028)	(0.034)	(0.054)
RFP	**-0.244*** **	-0.062	**-0.132***	-0.063
	(0.042)	(0.056)	(0.067)	(0.106)
Constant	6.019***	4.850*	10.744***	12.227**
	(2.037)	(2.700)	(3.238)	(5.167)
Observations	113	113	113	113
Robust	Yes	Yes	Yes	Yes

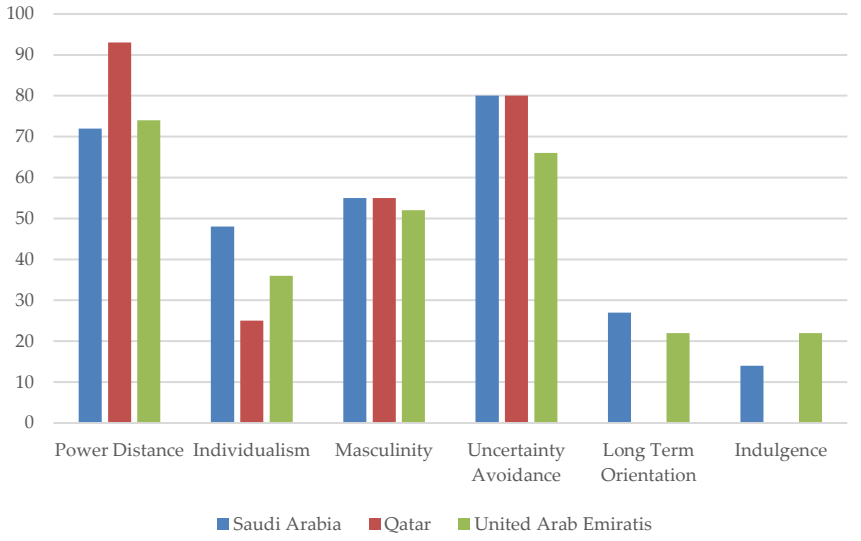
Note(s): This table shows the level of firm performance in four groups (Q25, Q50, Q75, and Q90). Unlike other analyses, this analysis provides a robust result related to corporate governance mechanisms and shows whether its impact on firm performance was a strong or weak. The table provides the outcome of more than 700 observations from Saudi-listed companies and other GCC countries for the period 2016-2019. Firm performance is measured by the return on assets (ROA) as the dependent variables. Corporate governance variables include firm size (SIZE), board size (SB), capital investment (INVES), CEO duality (CEO), audit quality (BIG4) and financial leverage (LEVE). This analysis is applied to show the firm performance for each year in listed firms in GCC countries and its effects on other dependent variables including the moderating variables (IFRS). Several variables are excluded from this analysis due to multicollinearity issues. Standard errors are in parentheses, *** *p<.01*, ** *p<.05*, * *p<.1*

Figure 1. Net foreign direct investment inflows of selected GCC countries during 2000–2020 (% of GDP)



Note: Compiled from World Development Indicators, World Bank (2022).

Figure 2. Cultural uniqueness of GCC countries through the lens of Hofstede's (2001) model

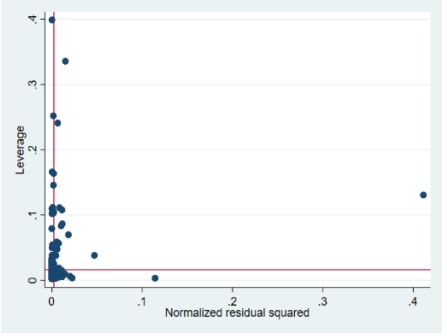


Note: Levels of cultural index is given in the Y-axis. Extracted from Hofstede insight 2022.

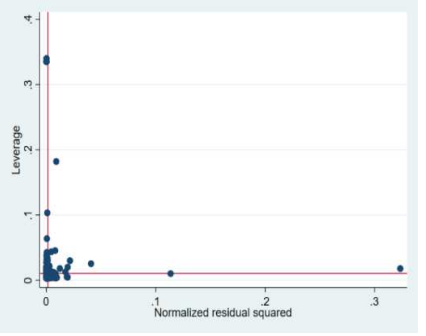
Appendix A

Ivr2 plot Test for outliers

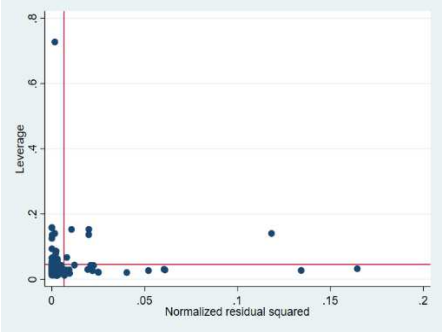
Ivr2 plot to check for outliers from selected GCC countries



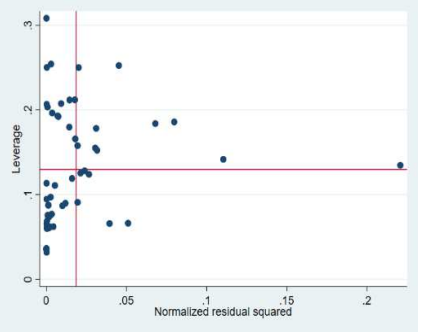
Ivr2 plot to check for outliers from Saudi Arabia



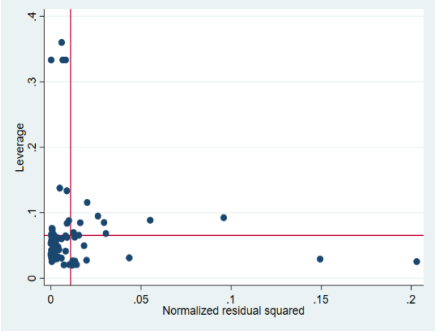
Ivr2 plot to check for outliers from Bahrain



Ivr2 plot to check for outliers from Qatar



Ivr2 plot to check for outliers from UAE



Appendix B

Summary statistics for all variables that are defined in Table 2.

Descriptive Statistics for GCC countries

Variable	Obs	Mean	Std. Dev.	Min	Max
FP	1099	2.003	10.861	-154.82	37.814
IFRS	1132	4.359	6.363	0	18
LEVE	1080	3.257	3.881	.11	78.215
SIZE	1118	1.086e+10	6.310e+10	0	9.450e+11
INVES	1079	1.539e+10	7.251e+10	-1.486e+09	1.320e+12
SB	1106	7.347	1.913	2	13
BIG4	1128	.385	.487	0	1
CEO	1060	.072	.638	0	6
RFP	159	19.74	11.822	9.09	66.67

Descriptive Statistics for Saudi Arabia

Variable	Obs	Mean	Std. Dev.	Min	Max
FP	720	2.146	10.525	-154.82	33.99
IFRS	736	.75	0.830	0	2
LEVE	707	2.696	2.325	.11	25
SIZE	732	28437091	1.128e+08	0	1.490e+09
INVEST	695	1.653e+10	8.680e+10	5065561	1.320e+12
SB	736	6.923	1.826	2	11
BIG4	732	.489	.5	0	1
CEO	735	.033	.442	0	6
RFP	56	19.440	9.591	10	50

Descriptive Statistics for Bahrain

Variable	Obs	Mean	Std. Dev.	Min	Max
FP	162	2.385	12.518	-133.353	37.814
IFRS	168	16.500	1.121	15	18
LEVE	160	4.678	7.623	1.026	78.215
SIZE	165	3.241e+09	7.937e+09	5746202	4.028e+10
INVEST	163	1.250e+09	2.856e+09	5193763	1.617e+10
SB	164	8.963	1.755	5	13
BIG4	168	.333	.473	0	1
CEO	168	.286	1.282	0	6
RFP	36	14.462	6.164	9.090	28.570

Descriptive Statistics for Qatar

Variable	Obs	Mean	Std. Dev.	Min	Max
FP	73	3.544	3.807	-6.452	13.915
LEVE	73	4.188	3.356	1.01	12.83
SIZE	75	8.514e+10	1.854e+11	1.054e+09	9.450e+11
INVEST	75	3.727e+10	5.616e+10	5.284e+08	3.050e+11
SB	59	8.322	1.444	6	11
BIG4	80	.2	.403	0	1
CEO	57	.07	.258	0	1
RFP	43	24.400	16.102	11.110	66.670

Descriptive Statistics for UAE

Variable	Obs	Mean	Std. Dev.	Min	Max
FP	144	.078	12.643	-101.64	15.37
LEVE	140	3.978	3.507	1.017	19.407
SIZE	146	3.560e+10	9.444e+10	52778716	6.830e+11
INVEST	146	1.452e+10	3.049e+10	-1.486e+09	2.050e+11
SB	147	7.279	1.552	3	11
BIG4	148	.027	.163	0	1
CEO	100	0	0	0	0
RFP	24	20.006	11.154	11.110	42.860