OWNERSHIP CONCENTRATION IN THE GULF COOPERATION COUNCIL

Irma Martínez-García
Comisión Nacional del Mercado de Valores
Calle de Edison, 4 - 28006 Madrid
Tel. +34 91 585 15 00
e-mail: irma.martinez@cnmv.es

Narjess Boubakri
American University of Sharjah
University City, 26666 Sharjah, United Arab Emirates.
Tel. +97165152587
e-mail: nboubakri@aus.edu

Silvia Gómez-Ansón
University of Oviedo
Avda. del Cristo s/n, 33006 Oviedo, Spain
Tel. +34 985102825
e-mail: sgomez@uniovi.es

Rodrigo Basco[1]
Sheikh Saoud Bin Khalid Bin Khalid Al Qassimi Chair in Family Business
American University of Sharjah
University City, 26666 Sharjah, United Arab Emirates.
Tel. +97165152356.
e-mail: bascorodrigo@gmail.com

ACKNOWLEDGEMENTS

---

[1]Address for correspondence: Rodrigo Basco. Email address: bascorodrigo@gmail.com

business in the Arab world. We would like to thank our research assistants Simran Chowdhry, Raya Alhawandeh, and Bilal Awan for their help during the data collection process.

Abstract

Purpose: This article attempts to answer the following questions: Who ultimately owns firms listed in the Gulf Cooperation Council (GCC) countries? Does ownership structure depend on the institutional context? How does ownership affect firm performance? Do institutional factors influence the ownership-performance relationship?

Design/methodology/approach: We apply univariate analyses and generalised methods of moments estimations for a sample of 692 GCC listed firms during 2009–2015.

Findings: Our results reveal that corporations are mainly controlled by the state or families, the ownership structure is highly concentrated, and pyramid structures are common in the region. Ownership is more concentrated in non-financial than financial firms, and ownership concentration and shareholder identity differ by institutional country setting. Finally, ownership concentration does not influence performance, but formal institutions play a moderating role in the relationship.

Practical implications: As our findings reveal potential Type II agency problems due to ownership concentration, policymakers should raise awareness of professional corporate governance practices and tailor them to GCC countries' institutional contexts.

Social implications: Even with the introduction of new regulations by some GCC states to protect minority investors and promote corporate governance practices, ownership concentration is a rigid structure, and its use by investors to protect their economic endowment and power is culturally embedded.

Originality/value: Although previous studies have analysed ownership concentration and large shareholders' identities across countries, this study fills a research gap investigating this phenomenon in-depth in emerging economies.

Keywords: Corporate governance, Ownership structure, Emerging economies, Gulf Cooperation Countries, Institutional setting

Article classification: Research paper

1. Introduction

The premise of widely dispersed ownership (Berle and Means, 1932) has been challenged by several studies demonstrating that large shareholders, such as individuals, families, and the state, control a significant proportion of stock market capitalisation in developed and developing countries (La Porta *et al.*, 1999; Claessens *et al.*, 2000; Faccio and Lang, 2002). These types of shareholders co-exist in many listed organisations. This evidence has implications for analysing and interpreting types of agency problems in organisations (and the associated costs). Beyond the traditional principal-agent problems, or Type I agency problems, described by Berle and Means (1932) and Jensen and Meckling (1976), principal–principal problems, or Type II agency problems also exist (Morck *et al.*, 2005). Principal–principal problems appear when large dominating shareholders extract private benefits at the expense of minority shareholders (Villalonga and Amit, 2006) and exist because of the conflicts of interests not only between large and small shareholders (e.g. tunnelling) but also among large shareholders whose objectives, risk preferences, and investment horizons often differ (Boyd and Solarino, 2016).

Extant research has shown that institutional factors shape cross-national differences in the level of ownership concentration and the identity of the largest shareholders (Aguilera and Jackson, 2003; Morgan *et al.*, 2010) boosting or reducing principal–principal problems. Due to weaker formal institutions and differential informal institutions, ownership concentration is more common in emerging economies than in developed economies (Lins, 2003; Armitage *et al.*, 2017) and Type II agency problems are more prevalent (Boyd and Solarino, 2016). For instance, there is evidence of tunnelling activities (Jiang *et al.*, 2010; Buchuk *et al.*, 2014) associated with principal–principal agency problems in emerging countries (Young *et al.*, 2008) and divergence of interest between state and other shareholders in the Gulf Cooperation Council (GCC) countries because the state may pursue its agenda (economic development) at the expense of other blockholders and minority owners (Martinez Garcia *et al.*, 2020).

Despite a rich literature on differences and similarities in ownership structures in emerging economies (e.g. East Asia in Claessens *et al.*, 2002; Latin America in Chong and López-de-Silanes, 2007; Korea in Joh, 2003; China in Qi *et al.*, 2000; and India in Douma *et al.*, 2006), research on corporate governance in GCC countries is scarce. While previous studies focused on corporate governance (Al-Malkawi *et al.*, 2014; Eulaiwi *et al.*, 2016) and ownership structure (Santos, 2015)

and their relationships with firm performance (Almudehki and Zeitun, 2012; Uddin *et al.*, 2014; Zeitun, 2014; Eulaiwi *et al.*, 2016; Abdallah and Ismail, 2017; Bajrei *et al.*, 2018), they present several limitations. First, they do not consider the ultimate ownership methodology, which is a limitation when analysing ownership structures (Santos, 2015). Second, some studies on the ownership structure-firm performance relationship in GCC countries analyse either only one country (Almudehki and Zeitun, 2012: Qatar; Uddin *et al*, 2014: United Arab Emirates [UAE]) or one industry (Bajrie *et al.*, 2018: banks). Third, previous studies do not differentiate between the potential impact of the first, second, third, etc. shareholders using a methodology that considers endogeneity issues (Demsetz and Villalonga, 2001). Finally, with some exceptions (e.g. Awartani *et al*., 2016; Touil and Mamoghli, 2020), existing research does not consider the impact of cross-country differences in institutional settings on the ownership-performance relationship.

In this study, we attempt to fill the aforementioned gaps in the literature providing answers to the following research questions: Who ultimately owns GCC countries' listed firms? Does ownership structure depend on the country's institutional context? How does ownership—specifically, the ownership held by large shareholders—and ownership concentration affect firm performance? Do country institutional factors influence the relationship between ownership and firm performance?

Our interest in the GCC region is motivated by several considerations. First, the growing socioeconomic importance of these countries. With a population of 54.8 million in 2017 and gross domestic product (GDP) at current prices of US$ 1,461.9 billion (GCC Statistics, 2018), these economies represent more than 0.22% of world GDP (World Bank, 2019) and 61.4% of the GDP of the emerging Middle East Region in 2017 (PWC, 2018). Second, GCC countries rely heavily on natural resources (the hydrocarbon sector contributes an average 40% to the region's GDP) and the public sector is the main driver of growth (International Monetary Fund [IMF], 2017), increasing the opportunities for tunnelling and rent-extraction practices. Third, the rapid economic growth that these countries have experienced and the growing demand from regulators and international institutional investors for greater transparency and accountability have triggered reforms across the GCC countries helping develop their stock markets (Eulaiwi *et al.*, 2016; IMF, 2018) and boosting foreign direct investment (Bley and Chen, 2006; Khan and Onder, 2018). Fourth, regarding their informal institutional context, GCC countries are characterised by a

collectivist, tribal, and family-oriented culture, with ruler families associated with local/regional business families (Hanieh, 2011), which can affect firms' decisions, such as rent expropriation by large shareholders and firm performance. Despite their common formal and informal characteristics and geographic proximity, GCC countries are also institutionally different (IMF, 2018)[2].

Following La Porta *et al.* (1998, 1999, 2000), Holderness (2016a, b), and Aguilera and Crespí-Cladera (2016), we use firm-level data rather than the average firm ownership structure. Using a sample of 692 listed firms across GCC countries and 4,296 observations over 2009–2015 and applying a fact-based research approach (Hambrick, 2007), we analyse and report ultimate ownership structures, classify shareholders into different typologies, recognise controlling shareholders and their identity, and examine the use of pyramid and cross-holding structures. A cross-country comparison may uncover institutional and cultural specificities and help better understand the mechanisms blockholders use to exercise their control. Finally, we also investigate the ownership structure-firm performance relationship by running the generalised method of moments (GMM) estimations and addressing the possible moderating role of the institutional country setting.

Regarding our first research question about ownership structure and identity of ultimate owners in the GCC, our results, in line with Santos (2015), reveal that ownership structure is highly concentrated in GCC corporations, being higher than in most advanced and emerging economies. Further, a large majority of the corporations are ultimately controlled by the state or families. While cross-country differences exist, pyramid structures and holding companies as large shareholders are very common in the region, leading us to predict potential conflicts of interest between majority and minority shareholders (i.e. principal–principal agency problems). We observe that (1) the percentage of listed firms with just one significant shareholder is considerably lower (18.37% of firms in GCC countries compared to more than two-thirds and one-third of firms in East Asia and Western Europe, respectively); (2) the largest shareholder holds similar voting rights as in East Asian and Western European firms; (3) the state, rather than families, is the most

---

[2] Except for Qatar, they exhibit mixed legal systems combining Islamic law with either common or civil law and present differential characteristics in the institutional infrastructure and regulatory stock market framework (IMF, 2018).

common largest shareholder; and (4) pyramids and cross-holding structures are less frequent than in East Asia but more frequent than in Western Europe.

Regarding the second research question about the impact of country-specific institutional settings on firms' ownership structures, we find that the institutional context across countries is related to ownership concentration, large shareholders' identity, and the use of control-enhancing mechanisms. Despite Kuwait, Saudi Arabia, and the UAE approving legislation (from 2009–2015) to enhance minority investor protection, ownership concentration has remained stable over time in these countries; while in countries where minority investor did not evolve (Oman, Qatar, and Bahrain), ownership concentration increased. Finally, regarding the third and fourth research questions about the effect of ownership structure and firm performance and the moderating effect of institutional context, after controlling for endogeneity, in line with the results reported by Omran *et al.* (2008) for Egypt, Jordan, Oman, and Tunisia, but contrary to the results found by Zeitun (2014) for GCC countries, or by Wang and Shailer (2015) in their meta-analysis for emerging markets, ownership concentration does not have any effect on firm performance. Further, our findings highlight the importance of the institutional setting: institutional country context moderates the relationship between ownership concentration and firm performance. In line with Boubakri *et al.*'s (2005) claim of the importance of institutional variables (investor protection) for the ownership concentration-firm performance relationship, our findings show that institutional factors (disclosure of information and better government quality, specifically higher control of corruption and lower risk of investing for investors) moderate the relationship between ownership and firm performance.

Our study has theoretical and practical contributions. Following a context-sensitive approach (Bamberger, 2008), our study contributes to the current debate on the prevalence of ownership concentration and some typologies of large investors, their effect on firm performance, and the moderation effect of the countries' institutional framework by contextualising the research in the GCC region. This provides a more nuanced empirical evidence in a socioeconomic environment beyond the developed countries. Thus, we shed new light on the specificities of the GCC context and their importance to interpret the effect of ownership concentration on firm performance. In line with a context-sensitive approach, future research should further investigate the impact of the context (by considering its formal and informal forms and socioeconomic

development) on ownership concentration, owners' identity, and its moderation effect on their relationships with firm performance.

Additionally, our article also contributes to policymaking, showing the importance of context in determining ownership concentration and blockholders' identity and control-enhancing mechanisms. Despite the new regulations and additional efforts made by several GCC states after the 2008 global financial crisis to protect minority investors and promote more transparent governance practices, ownership concentration has hardly changed over the years. This finding shows the limited impact, at least in emerging markets, of adjusting specific laws or regulations to generate trust and confidence among minority shareholders and international investors on ownership structures. Investors seem to consider a broad picture of the institutional context when deciding their investments.

The remainder of the paper is organised as follows: Section 2 describes the database, variables, and methodology employed in the analysis. The results are presented in Section 3, and conclusions and future avenues of research are summarised in Section 4.

2. Database, variables and methodology

2.1. Sample, database, and variables

The initial sample comprises the entire population of firms (financial and non-financial firms) listed on the GCC stock markets —Bahrain Bourse (Bahrain), Kuwait Stock Exchange (Kuwait), Muscat Securities Market (Oman), Qatar Stock Exchange (Qatar), Saudi Stock Exchange or Tadawul (Saudi Arabia), Abu Dhabi Securities Exchange, Dubai Financial Market, and NASDAQ Dubai (United Arab Emirates)—over the 2009–2015 period (751 firms and 4,713 observations). From this initial sample, we exclude those firms headquartered outside the GCC, firms with no ownership records, and merged firms. The final sample contains an unbalanced panel of 692 firms and 4,296 observations (243 financial firms with 1,541 observations and 449 non-financial firms with 2,755 observations), as described in Table I. Financial and non-financial firms account for 35% and 65% of the sample, respectively, compared, for example, to 18.3% and 81.7%, respectively, used in Faccio and Lang (2002), who use 5,232 observations for Western European countries. Claessens *et al.* (2000) use 2,980 observations for East Asian countries.

Kuwaiti observations represent the highest number of firm-year observations (28.75%) followed by observations from Saudi Arabia (22.79%), Oman (18.37%), the UAE (17.34%), Qatar (6.40%), and Bahrain (6.35%). Relative to their respective shares in GCC GDP, observations from Kuwait, Oman, and Bahrain are over-represented compared to those from Saudi Arabia, the UAE, and Qatar. In terms of overall GCC GDP, Saudi Arabia's GDP represents 46.48% of the entire region followed by the UAE (25.24%), Qatar (11.14%), Kuwait (10.09%), Oman (4.91%), and Bahrain (2.15%). Between 2009 and 2015, the number of sample firms increased from 574 to 653 (13.36% to 15.20% of firm-year observations), largely due to increase in Kuwait (+24) and Saudi Arabia (+41); increases in Qatar (+7), the UAE (+4), and Bahrain (+4) were marginal while in Oman the number of firms decreased (−1).

- Insert Table I-

The information required to estimate the variables employed in the study was gathered manually from different sources. The firm ownership structure is sourced from Thomson Reuters Zawya database or the firms' annual reports; financial information from Thomson Reuters Zawya and ORBIS databases, GCC stock markets reports, and firms' annual reports; and country-level institutional and economic information from the World Bank datasets (World Development Indicators, Worldwide Governance Indicators, and Doing Business), the International Country Risk Guide, and Prof. Andrei Shleifer's webpage.

Table II shows the list and definitions of the variables used in the analyses. Following Claessens *et al.* (2000), we consider large or significant shareholders as those with more than 5% of firm voting rights. Additionally, we define different continuous variables to capture the ownership held by large or significant shareholders: for instance, the ownership held by the largest, the second-largest, and the third-largest shareholder (*FSH*, *SSH*, *TSH*); the number of significant shareholders (*NLSH*); the sum of ownership stakes held by all significant shareholders (*OWNCON*); and the normalised Herfindahl-Hirschman Index (*HHI*), which is a widely accepted measure of firm ownership concentration (e.g. Demsetz and Lehn, 1985; Goergen and Renneboog, 2001; González *et al.*, 2017). The normalised HHI (Hirschman, 1945; Herfindahl, 1950; Baumann, 2009) is defined as follows:

$$HHI_{it} = \frac{\sum_{j=1}^{N} \left(\frac{SH_j}{OWNCON} \right)^2 - \frac{1}{N}}{1 - \frac{1}{N}} \; for \; N > 1$$

$$HHI_{it} = 1 \; for \; N = 1$$

where SH_j is the percentage of voting rights of each shareholder j, $OWNCON$ is the ownership held by all significant shareholders, and N is the number of significant shareholders. The index's values range between 0 (ownership is equally distributed among shareholders) and 1 (a single owner holds 100% of voting rights).

The existence of control blocks and the identity of the ultimate owners are captured considering that the largest blockholder has a shareholding control if it holds more than 10% of firm voting rights[3]. Following Claessens *et al.* (2000) and Faccio and Lang (2002), we classify the largest shareholders into six categories: (1) *FAMILY*: a family or an individual; (2) *STATE*: a GCC government, local authority, government agency, or government sovereign fund; (3) *INSTITUTIONAL*: an institutional investor (e.g. mutual, pension, or hedge fund), firms classified by Thomson Reuters as investment advisors, or a foreign sovereign fund; (4) *CORPORATION:* a non-financial corporation; (5) *FINANCIAL INSTITUTION*: a bank or an insurance firm; (6) *HOLDING*: a holding company[4]. When there is no controlling shareholder with more than 10% of firm voting rights, we classify the firm as *WIDELY HELD*.

The initial definition of ownership relies on direct ownership, which coincides with the ultimate owner as defined by La Porta *et al.* (1999), Claessens *et al.* (2000), and Faccio and Lang (2002) for *WIDELY HELD*, *FAMILY*, *STATE*, and *INSTITUTIONAL* shareholders. However, when the largest shareholder is a non-financial (*CORPORATION*), a financial (*FINANCIAL INSTITUTION*), or a holding (*HOLDING*) company, the ultimate owner may differ from the direct

---

[3] Because sample firms are all listed firms, a 10% threshold is considered sufficiently large to attain control. The 10% boundary has been widely used in the literature, for example, by La Porta *et al.* (1999).

[4] Shareholder identity information comes from Thomson Reuters Zawya database, which classifies investors as "Individual Investor", "Other Insider Investor", "Sovereign Wealth Fund", "Government Agency", "Investment Advisor", "Hedge Fund", "Private Equity", "Pension Fund", "Corporation", "Bank and Trust", "Insurance", and "Holding Company". However, under the Thomson Reuters Zawya "Corporations" typology, banks, insurance firms, and holding companies are also included. Thus, these firms are reclassified under "Bank and Trust", "Insurance", and "Holding Company" and we leave only non-financial firms under the "Corporation" label.

shareholder (e.g. the ultimate owner may be a family or the state). Therefore, we follow the chains of control to identify the ultimate owner and/or the existence of pyramid or cross-holding structures.

In most cases, the aforementioned procedure to trace the ultimate owner leads to an unlisted firm because, in the context of GCC countries, firms are not required to disclose their shareholders. In similar situations, previous studies have classified such firms as family firms (La Porta *et al.*, 1999; Claessens *et al.*, 2000; Faccio and Lang, 2002). However, within the GCC context, we consider this approach inappropriate because families, individuals, and government institutions are largely prevalent in GCC economies. Accordingly, instead of inferring one type of ultimate owner, the largest shareholders are classified based on their direct shareholdings as *CORPORATION, FINANCIAL INSTITUTION,* or *HOLDING.* Nevertheless, to capture potential differences between their cash flow and control rights, we additionally classify corporations and financial institutions' shareholdings into three different categories: *PYRAMIDS*, when there is a chain of control in which the last identified owner at the end of the chain is a family, an individual, a government institution, an institutional investor, or a private firm holding at least 10% of firm voting rights; *WIDELY HELD FIRMS*, when the ultimate owner is a listed firm with no controlling shareholder with more than 10% of firm voting rights; and *CROSS-HOLDINGS*, when the firm controls at least 10% of its stock or when it is controlled by another firm that is itself controlled by the first one (the given firm). Thus, the existence of discrepancies between cash flow and control rights are captured without making any assumptions. Additionally, the *CONTROLLING OWNER ALONE* variable refers to those firms that present just one controlling owner.

Figure 1 summarises the ownership structure (for 2015) of a sample Saudi Arabian firm, namely, Almarai Company SJSC, which has three significant shareholders (*NLSH* = 3). Considering direct ownership, *FSH, SSH,* and *TSH* are a non-financial listed firm, an individual investor, and a non-financial private firm holding 34.52%, 28.69%, and 5.70% of voting rights, respectively. The value of *OWNCON* is 68.91% and *HHI* is 0.15. As the first largest shareholder is a non-financial corporation, we follow the control chain that reveals a pyramid structure (*PYRAMIDS* = 1). The *FSH* (Savola Group Company SJSC) has three significant shareholders: a non-financial private firm (14.32% of voting rights) completely controlled by a family (*FAMILY* = 1), the state (10.23% of voting rights), and an individual investor (8.21% of voting rights). While

we were able to identify the identity of the ultimate owner (Al Muhaidib Family) for this specific firm, for several firms included in the sample, at the end the chain of control, we found an unlisted firm for which no ownership data is available (such is the case, for example, for the third direct largest shareholder in Figure 1: Omran Mohammad Al Omran & Partners Co. Ltd.). For these cases, we do not infer the type of ultimate owner and consider that the ultimate owner is a *CORPORATION*, *FINANCIAL INSTITUTION*, or *HOLDING*.

- Insert Figure 1-

We consider the following firm characteristics: the industry-adjusted firm market-to-book ratio (*AVALUE*) and value of total assets (*ASSETS*) as measures of firm size, the number of years since the firm's foundation (*AGE*), firm's leverage ratio (*LEV*), and whether the firm is financial or non-financial (*FINANCIAL* and *NON-FINANCIAL*). Country and institutional variables include GDP expressed in 2010 constant prices (*GDP*), legal origin, investor protection, and government quality. Legal origin variables relate to the legal origin (common law or civil law) of the commercial law of the country (*COMMON LAW*; *CIVIL LAW*). Investor protection variables include two continuous variables that capture the strength and impartiality of the legal system and the popular observance of the law (*LAW AND ORDER*) and the review and approval requirements and internal immediate and periodic disclosure requirements for related-party transitions (*DISCLOSURE INDEX*). Government quality is measured by three continuous variables: (1) the government's ability to implement its declared programmes and to stay in office (*GOVERNMENT STABILITY*), (2) perceptions of the extent to which public power is exercised for private gain (*CONTROL OF CORRUPTION*), and (3) factors affecting the risk of investing for investors (*INVESTMENT PROFILE*).

- Insert Table II -

2.2. Methodology

Besides descriptive statistics, we run statistical differences tests depending on the type of variable, that is, the Mann-Whitney U test for continuous variables and Chi-squared test for dummy variables. When estimating the relationship between ownership concentration and firm performance, we consider two potential problems: unobservable individual heterogeneity (i.e. the

particular behaviour, characteristics, and specifics of each firm) and endogeneity (i.e. ownership concentration is the endogenous outcome of profit-maximising decisions made by shareholders). To control for unobserved heterogeneity and endogeneity issues, we apply GMM techniques (Pindado and Requejo, 2015); specifically, we apply the GMM estimator proposed by Arellano and Bond, (1991). The two-step difference GMM model is defined as:

$$AVALUE_{it} = \beta_1 X_{it} + \sum_{t=2009}^{2015} Y_t + \varepsilon_{it}$$

where $AVALUE_{it}$ is the continuous dependent firm performance variable, namely, the industry-adjusted market-to-book ratio of firm i in year t, X_{it} denotes the explanatory variables related to ownership concentration (*FSH; SSH; TSH; NLSH, OWNCON*; and *HHI*), country variables (*CIVIL LAW; LAW AND ORDER; DISCLOSURE INDEX; GOVERNMENT STABILITY; CONTROL OF CORRUPTION*; and *INVESTMENT PROFILE*), and control variables (*AGE; ASSETS*; and *LEV*), $\sum_{t=2009}^{2015} Y_t$ is a set of time dummy variables, and ε_{it} is the error term. Additionally, to test the validity of the GMM model specification, we employ the M^2 statistic to verify the lack of second-order serial correlation in the first-difference residuals used and the Hansen statistic of over-identifying restrictions to test for the absence of correlation between the instruments and the error term. Although some variables show a statistically significant correlation, analysis of the variance inflation factors (VIFs) reveals no evidence of multicollinearity because no VIF is above 10 (Kleinbaum *et al.*, 1998). Finally, we corrected autocorrelation and heteroscedasticity issues by using the finite sample-corrected two-step covariance matrix.

3. Results and discussion

3.1. Descriptive statistics

Table III presents the descriptive statistics for key ownership structure variables in the study over the 2009–2015 period and compares our results with those reported by Claessens *et al.* (2000) and Carney and Child (2013) for East Asia and Faccio and Lang (2002) for Western Europe. The variables related to ownership structure reveal that the largest shareholder holds 32.95% of firm voting rights on average, almost double the percentage reported by Claessens *et al.* (2000) for East Asia (19.77%) but similar to that reported by Faccio and Lang (2002) for Western Europe

(38.48%) and Carney and Child (2013) for East Asia (31.5%[5]). In contrast, the largest shareholders in the GCC are not families but the state (*STATE*), which controls 22.53% of firms (while *FAMILY* controls 15.90%). Finally, 10.20% of observations have no shareholders with more than 10% of firm voting rights (*WIDELY HELD*), which is similar to that reported in La Porta *et al.* (1999) for a worldwide study (and by Boubaker and Labégorre (2008) for French firms) using the 10% threshold but is lower than the 19.75%[6] and 22.9% for widely held firms reported in Claessens *et al.* (2000) and Carney and Child (2013) for East Asian firms and 36.93% (using the 20% threshold) in Faccio and Lang (2002) for Western European corporations. This result suggests that widely held firms are significantly less frequent in GCC (one out of ten) than in East Asia (one out of five) or Western Europe (one out of three) and equally frequent worldwide or some specific developed European countries (e.g. France).

About control-enhancing mechanisms, the use of pyramids (*PYRAMIDS*) in GCC firms (20.16% of firms) is less frequent than in East Asia—38.7% in Claessens *et al.* (2000) and 23.8%[7] in Carney and Child (2013)—but is generally higher than in Western Europe—12.07%[8] in Faccio and Lang (2002). Only 3.77% of GCC firms have widely held corporations (*WIDELY HELD FIRMS*), a significantly lower percentage than in East Asia (33.30%[9] and 11.6%, depending on the study) or Western Europe (10.71%). Additionally, only a few firms have cross-holding structures (*CROSS-HOLDINGS*) in the GCC (0.86% of the firms). This is much lower than that reported by Claessens *et al.* (2000) and Carney and Child (2013) for East Asia (10.1% and 2.6%, respectively) and by La Porta *et al.* (1999) for the whole world (3.15%) and is higher than the 0.51% reported by Faccio and Lang (2002) for Western Europe. One significant shareholder exists in 18.37% of GCC firms (*CONTROLLING OWNER ALONE*), which is lower than that observed in Western

---

[5] Carney and Child (2013) report 43.70% of voting rights of the first largest shareholder using a sample of 999 firms with controlling shareholders. We approximate figures for the whole sample.

[6] Claessens *et al.* (2000) do not report results for the whole sample and segregate by country. We approximate figures for the whole sample.

[7] Carney and Child (2013) report 30.9% for pyramids using a sample of 999 firms with controlling shareholders. We compute 23.8% for pyramids using their whole sample (1,296 firms).

[8] Faccio and Lang (2002) report 19.13% for pyramids using a sample of 3,300 firms with controlling shareholders. We compute 12.07% for pyramids using their whole sample (5,232 firms).

[9] Classens *et al.* (2000) do not report results for the whole sample and segregate by country. We approximate figures for the whole sample.

Europe (34.05%[10]) and East Asia (where more than two-thirds of firms have a single ultimate shareholder). Firms are also more likely to belong to the non-financial sector than the financial sector (64.13% versus 35.87%). In comparison, non-financial firms account for 81.7% of firms in Western Europe (Faccio and Lang, 2002).

- Insert Table III -

Table IV shows the descriptive statistics of the ownership concentration variables for GCC and its members considering financial and non-financial firms. As in Table III, *FSH* holds 32.95%, while *SSH* and *TSH* hold 10.57% and 4.66% of the voting rights, respectively. On average, each firm has 2.71 significant shareholders (*NLSH*), and the ownership held by all significant shareholders is 51.70% (*OWNCON*). The normalised *HHI* is 0.344, suggesting a higher ownership concentration in GCC countries compared to, for example, South Korea (Kim *et al*., 2007).

We observe several significant differences between both sub-samples: the voting rights of *FSH* and *TSH* and *OWNCON* are higher in *NON-FINANCIAL* firms compared to *FINANCIAL* firms (33.30% versus 32.32%, 4.85% versus 4.33%, and 52.32% versus 50.60%, respectively). These differences are statically significant at the 5% level. However, no significant differences exist between *FINANCIAL* and *NON-FINANCIAL* firms for *SSH* voting rights, *NLSH*, and the normalised *HHI*. While Claessens *et al.* (2000) do not differentiate between financial and non-financial firms, Faccio and Lang (2002) present some evidence regarding the ultimate shareholders across these sub-samples: they observe that in Western Europe, control of non-financial firms is held most frequently by families (over 48.15% versus 26.54% for financial firms) followed by individuals (Table IV). In contrast, control is most widely held within financial firms (39.92% of firms). Other studies also find lower ownership concentration for financial firms in other regions. For instance, Richter and Weiss (2013) report lower ownership concentration for the financial sector compared to the non-financial sector for a set of nine countries, and Omran *et al.* (2008) find similar results for Egypt, Jordan, Oman, and Tunisia.

The data also reveals significant differences between GCC countries. The *FSH* voting rights are higher in *NON-FINANCIAL* firms compared to *FINANCIAL* firms in Qatar (31.41%

---

[10] Faccio and Lang (2002) report 53.99% of firms with only one significant shareholder using a sample of 3,300 firms with controlling shareholders. We compute 34.05% of firms with a single controlling shareholder using their whole sample (5,232 firms).

versus 15.28%) and Oman (39.68% versus 31.36%). However, the opposite is observed in Bahrain (30.45% versus 39.45%) and Saudi Arabia (25.41% versus 28.13%). No significant differences are observed in Kuwait and the UAE. The *SSH* voting rights are higher in *NON-FINANCIAL* firms in Kuwait (12.12% versus 9.14%) but are higher for *FINANCIAL* firms in Bahrain (12.39% versus 10.72%), Saudi Arabia (10.36% versus 8.17%), and the UAE (10.45% versus 8.76%). The *TSH* voting rights are higher for *NON-FINANCIAL* firms in Kuwait (5.69% versus 3.82%) and Oman (6.80% versus 5.47%) unlike Saudi Arabia (2.69% versus 3.55%) and the UAE (4.90% versus 5.60%). This reveals that the financial sector is more closely controlled by the two largest shareholders in Bahrain and Saudi Arabia and to a lesser extent in the UAE.

The *NLSH* in financial and non-financial firms also differ between GCC countries: higher for *NON-FINANCIAL* firms in Kuwait (2.88 versus 2.46) but smaller for *NON-FINANCIAL* firms in Saudi Arabia (2.35 versus 2.59) and the UAE (2.88 and 3.41). The total voting rights held by significant shareholders (*OWNCON*) is higher in *NON-FINANCIAL* firms in Kuwait (56.50% versus 52.01%), Oman (65.90% versus 55.99%), and Qatar (37.63% versus 21.89%) but is smaller in *NON-FINANCIAL* firms in Bahrain (50.21% versus 58.77%) and Saudi Arabia (28.25% versus 44.36%). Finally, ownership concentration captured by the normalised *HHI* is higher in *NON-FINANCIAL* firms in Oman (0.30 versus 0.20), Qatar (0.63 versus 0.50), and the UAE (0.40 versus 0.31) compared to *NON-FINANCIAL* firms in Kuwait (0.30 versus 0.42). Thus, aside from the *HHI*, the overall results seem to reveal two groups of countries within the GCC region: Saudi Arabia, the UAE, and Bahrain, on the one hand, and Qatar, Oman, and Kuwait, on the other. Each group appears to share similar ownership structures, with higher ownership concentration in financial firms for the former group.

- Insert Table IV -

GCC countries also differ in institutional characteristics (Table V). We observe two groups of countries in terms of legal origin as Kuwait, Oman, and Qatar follow *CIVIL LAW*, whereas Bahrain, Saudi Arabia, and the UAE follow *COMMON LAW*. The strength and impartiality of the legal system (*LAW AND ORDER*) in GCC takes the value of 4.72 out of the possible range of 0 to 6. This value is higher than the average for the same period for Asia (3.9), the Middle East and North Africa (MENA) region (4.1), and the world (3.7). The value of the *DISCLOSURE INDEX*, which is related to investor protection and can range from 0 to 10, is 6.36 for GCC countries, which

is also higher than the average for Asia (6.12), MENA (5.56), and the world (5.23). Government quality indices, namely, *GOVERNMENT STABILITY* (range from 0–12), *CONTROL OF CORRUPTION* (range from −2.5–2.5), and *INVESTMENT PROFILE* (range from 0–12) take the values of 8.89, 0.45, and 10.33, respectively. These figures are higher than the mean values for Asia (7.9, −0.32, and 8.5), MENA (7.7, −0.27, and 8.4), and the world (7.5, −1.20, and 8.2).

The formal institutional context also differs among countries. These differences are quite marked for the *DISCLOSURE INDEX* variable, with Bahrain, Oman, and Saudi Arabia having high values (8 out of 10) and Kuwait (one of the countries— together with Saudi Arabia and the UAE—that approved legislation to enhance minority investor protection) having the lowest value (4) followed by Qatar (5) and the UAE (5.14). The strength and impartiality of the legal system (*LAW AND ORDER*) are higher in Oman, Qatar, and Saudi Arabia (5 out of 6) than in Bahrain (4.71), Kuwait (4.69), and the UAE (4). Countries differ significantly in terms of the *GOVERNMENT STABILITY* index, with Qatar (10.71 out of 12), the UAE (10.50), Oman (9.86), and Saudi Arabia (8.93) all having index values above the GCC region mean (8.89), while Kuwait (6.21) and Bahrain (7.10) exhibit the lowest values. Regarding the *CONTROL OF CORRUPTION* index (ranges from −2.5–2.5), only Qatar (1.15) and the UAE (1.09) have index values above the GCC mean (0.45), whereas Bahrain (0.26) and Oman (0.25) have index values below the GCC average. For Qatar (−0.02) and Saudi Arabia (−0.03), the figures are negative. Finally, Oman (11), the UAE (10.71), Saudi Arabia (10.57), and Bahrain (10.43) have the highest *INVESTOR PROFILE* index values (out of 12) followed by Qatar (9.93) and Kuwait (9.36). Therefore, GCC countries have heterogeneous institutional settings and institutional characteristics with specific strengths and weaknesses related to investor protection and government quality proxies.

- Insert Table V -

Although not shown, we analyse the evolution of ownership concentration over the 2009–2015 period for GCC and its members. Despite Kuwait, Saudi Arabia, and the UAE approving legislation to enhance minority investor protection during the period[11] under study—which would be expected to lead to a decrease in ownership concentration over time—the results suggest otherwise. The ownership concentration has remained stable over time. The situation is different in Oman, a country where the number of significant shareholders (*NLSH*) and the shareholdings

---

[11] No such reforms were approved or implemented in Qatar, Oman, or Kuwait.

held by all significant shareholders (*OWNCON*) increased considerably from 2009 to 2015 (from 2.62 to 3.85 shareholders and from 59.12% to 70.68% of ownership, respectively). The increase in the percentage of ownership controlled by significant shareholders goes parallel to the increase in the number of significant shareholders. As a consequence, the normalised *HHI* decreased for the GCC region between 2009 (0.33) and 2015 (0.23). The same evolution is observed in Qatar. Overall, the data reveals an increase in ownership concentration in Oman, Qatar, and Bahrain and a stable ownership concentration in Saudi Arabia, Kuwait, and the UAE. These findings reflect a substitution effect between investor protection and ownership structure. That is, in countries where minority investor protection has not increased over time (Oman, Qatar, and Bahrain), minority shareholders have no incentives to invest extensively, leaving room for majority investors to accumulate ownership rights (increasing the number of majority shareholders and decreasing firms' free float).

Table VI presents the descriptive statistics related to the percentage of firms with different types of largest owners for the whole sample, the sub-samples of financial and non-financial firms, each GCC country, and the region as a whole. Our previous evidence shows that in GCC countries, the most common largest shareholder is not the *FAMILY* but the *STATE* (22.53% of the observations), especially among financial firms (24.14% compared to 21.34% for non-financial firms). The *STATE* as the largest shareholder is followed by holding companies (*HOLDING*) and families (*FAMILY*) who control 19.90% and 15.90% of firms, respectively. Furthermore, 15.67% of firms are controlled by non-financial corporations (*CORPORATION*), while 9.12% are controlled by banks and insurance firms (*FINANCIAL INSTITUTION*) and 6.87% by institutional investors (*INSTITUTIONAL*). The importance of the *STATE* as the major shareholder is particularly visible in Bahrain, Qatar, and the UAE (45.42%, 40%, and 39.06% of the country observations, respectively). However, the *STATE* is not the most common largest shareholder for all countries. For instance, in both Kuwait and Oman, *HOLDING* companies are the most frequent largest shareholders. These countries also exhibit the lowest percentage of *WIDELY HELD* corporations (e.g. only 1% in Kuwait). The importance of families as the largest shareholders (*FAMILY*) also varies significantly between countries, with just 4% in Qatar compared to 23.22% in the UAE. For the entire GCC region, families represent 15.89% of all observations on average.

Control-enhancing mechanisms are not evenly distributed among GCC countries. *PYRAMIDS* are prevalent in Kuwait (30.12% of the observations) but not in other countries (e.g. Qatar with 8.73% of the observations). In the region, *PYRAMIDS* occur every five observations. *CROSS-HOLDINGS* are barely used across the region, except in the UAE, and the main shareholder is rarely alone (*CONTROLLING OWNER ALONE*) in Bahrain (12.09% of the observations) but is more frequently alone in Qatar (35.27% of the observations). For the whole GCC region, in almost one out of every five observations, the largest shareholder is alone. Lastly, *WIDELY HELD FIRMS* as ultimate owners are quite uncommon in all the countries.

- Insert Table VI -

3.2. Univariate analyses

In Table VII, we run a univariate analysis to examine the differences in ownership variables by splitting the sample of countries according to their level of institutional development. Our findings confirm existing evidence (e.g. La Porta *et al.* [1998, 1999]) that ownership concentration (*OWNCON*) is higher in *CIVIL LAW* countries where investor protection is relatively lower. A higher concentration of voting rights in the hands of the *FSH*, *SSH*, or *TSH* is also observed in these countries. Interestingly, families (*FAMILY*) and the state (*STATE*) are generally the largest ultimate shareholders in *COMMON LAW* GCC countries, whereas institutions (*INSTITUTIONAL*), corporations (*CORPORATION*), and holding companies (*HOLDING*) dominate in *CIVIL LAW* GCC countries. These results show that although firms in GCC common law countries exhibit lower ownership concentration, their largest shareholder is either the state or families. This result is aligned with the results of Richter and Weiss (2013), who find lower levels of ownership concentration in common law countries compared to civil law countries. Similarly, single controlling owners (*CONTROLLING OWNER ALONE*) and *PYRAMIDS* are less frequent in *COMMON LAW* countries, whereas—contrary to expectations—cross-shareholdings (*CROSS-HOLDINGS*) are more frequent.

The *LAW AND ORDER* index is significantly negatively related to the ownership concentration variables (*FSH*, *SSH*, *OWNCON* but not *HHI*) and the existence of *PYRAMIDS* but not to the presence of the *STATE* as the main shareholder or to holdings (*HOLDING*). It is positively and significantly related to widely held firms (*WIDELY HELD*), suggesting that investor protection is negatively related to ownership concentration, aligned with La Porta *et al.* (1998),

Spamann (2010), and Ritcher and Weiss (2013). Likewise, for similar institutional contexts as ours, Al-Awif and Vergos (2017) observe a negative relationship between the rule of law index and ownership concentration in the MENA region, and Omran *et al.* (2008) conclude that ownership concentration in Egypt, Jordan, Oman, and Tunisia is a response to poor legal protection of investors. The same applies to the *DISCLOSURE INDEX* variable. We find a negative relationship between the level of disclosure and the ownership concentration variables (*FSH*, *OWNCON,* and *HHI*) and control-enhancing mechanisms (*PYRAMIDS* and *CONTROLLING OWNER ALONE*), but no association is evidenced between the *DISCLOSURE INDEX* and the existence of firms with dispersed ownership (*WIDELY HELD*). The negative relationship between ownership concentration and the institutional disclosure variable that we report is consistent with the findings of previous studies, such as Haniffa and Cooke (2002), Barako *et al.* (2006), Huafang and Jianguo (2007), Patelli and Prencipe (2007), Tsamenyi *et al.* (2007), Chau and Gray (2010), and Ştefănescu (2012). Similar to the *LAW AND ORDER* variable, the *DISCLOSURE INDEX* is not related to the presence of the *STATE* as the largest shareholder, but higher levels of investor protection are positively related to the presence of *FAMILY* as the first controlling shareholder. Additionally, ownership concentration and control-enhancing mechanisms, such as pyramids, are more prevalent in firms from GCC civil law countries. Both indices significantly influence the existence of control-enhancing mechanisms.

- Insert Table VII -

In Table VIII, we replicate the univariate analysis of Table VII but apply indicators of government quality, namely, *GOVERNMENT STABILITY*, *CONTROL OF CORRUPTION*, and *INVESTMENT PROFILE*. When we split our sample for these indicators, in line with Al-Awif and Vergos (2017), we find that *OWNCON* is higher when *GOVERNMENT STABILITY* and *CONTROL OF CORRUPTION* are lower and when *INVESTMENT PROFILE* is higher. Higher *GOVERNMENT STABILITY* and *CONTROL OF CORRUPTION* are associated with lower stakes held by *FSH* and a larger proportion of widely held firms (*WIDELY HELD*). Contrary to our expectation, the percentage of firms with just one controlling shareholder (*CONTROLLING OWNER ALONE*) is higher and the number of significant shareholders (*NLSH*) is lower. Interestingly, higher *GOVERNMENT STABILITY* and *CONTROL OF CORRUPTION* are positively related to the presence of *FAMILY* and *STATE* as the largest shareholders. *CORPORATION* and *HOLDING* are the largest shareholders when *GOVERNMENT STABILITY,*

CONTROL OF CORRUPTION, and *INVESTOR PROFILE* are lower. This finding is consistent with the higher existence of *PYRAMIDS* as control-enhancing mechanisms when government quality indexes are low. In summary, higher government quality and investor protection lead to lower levels of ownership concentration, do not favour the use of pyramids as control-enhancing mechanisms, and increase the probability of having families as controlling shareholders. Although investor protection levels do not seem to affect government shareholdings, the state is more prevalent as the largest shareholder in GCC countries with higher government stability.

- Insert Table VIII -

3.3. Regression analyses

Table IX shows the results of the GMM models that analyse the relationship between ownership concentration and firm performance for the sub-sample of non-financial firms[12]. As evident, the ownership held by *FSH*, *SSH*, *TSH*, the first two largest, the three largest, or all the large shareholders (*OWNCON*) or the normalised *HHI* does not affect firm performance. The coefficient of variable *NLSH* representing the number of large shareholders is also non-significant. Overall, these results contradict the positive ownership concentration and firm performance relationship reported by Almudehki and Zeitun (2012) for Qatar and by Zeitun (2014) for five GCC countries, and the negative relationship found in the meta-analysis for emerging economies by Wang and Shailer (2015), but are in line with the findings reported by Sanchez-Ballesta and García-Meca (2007) in a 33-study meta-analysis and by Omram *et al.* (2008) for a sample of Egyptian, Jordanian, Omani, and Tunisian listed firms. The only variables that turn out significant to influence firm performance are *ASSETS* (size) and leverage (*LEV*), in both cases, negatively. In line with previous results by De Miguel *et al.* (2004) and Almudehki and Zeitun (2012), smaller firms seem to benefit from behavioural advantages, such as entrepreneurial dynamism, internal flexibility, or responsiveness to changing circumstances (Rothwell, 1989) that positively impact their performance. Contradicting previous findings reported by Almudehki and Zeitun (2012) and Zeitun (2014) of either a positive or non-significant relationship between leverage and firm

---

[12] The models reported in Tables IX, X, and XI refer to GCC non-financial firms, thereby excluding finance, banking, and insurance firms, all of which have differential characteristics (Prowse 1997; Stoney and Winstanley, 2001). We repeated the estimations for the sub-sample of financial firms, and the results lead to similar conclusions.

performance, leverage does not seem to act as a monitoring mechanism (Jensen, 1986) but decreases firm value (Opler and Titman, 1994).

- Insert Table IX -

Although we do not find a significant influence of ownership concentration on firm performance (Table IX), additionally, we consider whether the institutional environment may act as moderating factor in the relationship (i.e. if a cross-over interaction term exists). Tables X and XI show the results of GMM estimations considering institutional country setting as a moderating factor. Legal origin (*CIVIL LAW*) or *LAW AND ORDER* do not impact the relationship but the level of disclosure (*DISCLOSURE INDEX*) seems to play a moderating role in the relationship between *SSH*, *TSH*, and *NLSH* and firm performance (Table X). Although results reported in Table IX do not show a significant influence of multiple significant shareholders on firm performance, results change when we account for cross-country differences in institutional settings. Indeed, our results reveal that voting rights of the second and the third shareholder, as well as the total number of blockholders, positively impact firm performance when disclosure requirements are high (*SSH × DISCLOSURE INDEX*; *TSH × DISCLOSURE INDEX*; *NLSH × DISCLOSURE INDEX*). In countries where disclosure requirements are low, other large shareholders (*SSH*, *TSH*, and *NLSH*) negatively influence performance. Thus, the absence of a direct effect between ownership concentration and firm performance reported in Table IX may be explained by the key role played by the positive or negative effect of disclosure requirements, the second- and third-largest shareholders' voting rights, and the number of blockholders on firm performance and those opposite effects are cancelled when the institutional environment is not considered. Overall, these results suggest that in countries with a high level of disclosure, other large shareholders have incentives to extra monitor the largest shareholders, thus enhancing firm performance. Instead, when disclosure requirements are low, principal–principal conflicts seem to appear.

Similarly, in terms of government quality indicators, our findings reveal a positive moderating role of *CONTROL OF CORRUPTION* and *INVESTMENT PROFILE* over the effect of the *SSH* and/or *TSH* on firm performance. Additionally, *INVESTMENT PROFILE* positively moderates the effect of *NLSH* and *OWNCON* on firm performance (Table X). Therefore, better government quality, specifically, lower risk of investment, induces a monitoring role of blockholders, thus, enhancing firm performance. Our findings are aligned with those reported by

Attig *et al.* (2009) for nine East Asia economies and Jara-Bertín *et al.* (2008) for a sample of family firms from 11 European countries.

- Insert Table X -

- Insert Table XI -

3.4. Robustness checks

We extend our estimations using different variables and methodologies. First, we repeat the analyses reported in Tables VI, VII, and VIII considering a 20%, instead of a 10% threshold, to capture the control blocks and ultimate owners. Applying the 20% threshold, the percentage of firms with different types of ultimate owners decreases, whereas the percentage of widely held firms increases: *FAMILY* (15.89 versus 10.10), *STATE* (22.53 versus 18.06), *INSTITUTIONAL* (6.86 versus 4.75), *CORPORATION* (15.66 versus 12.15), *FINANCIAL INSTITUTION* (9.12 versus 7.59), *HOLDING* (19.90 versus 16.08), and *WIDELY HELD* (10.19 versus 30.33). Control-enhancing mechanisms are also less frequent: *PYRAMIDS* (21.16 versus 16.08), *WIDELY HELD FIRMS* (3.77 versus 2.91), *CROSS-HOLDINGS* (0.86 versus 0.81), and *CONTROLLING OWNER ALONE* (18.37 versus 15.34). However, we do not find significant differences when applying the 20% and 10% thresholds in the distribution of controlling shareholder identities and control-enhancing mechanisms among sectors and countries (Table VI) and institutional contexts (Tables VII and VIII).

Second, we include an additional control variable in the models reported in Table IX: the number of directors on boards. Due to the lack of information about the board of directors in the databases used, we lose almost three-quarters of the observations. The results do not vary and the board size does not emerge as a significant variable. Third, we estimate the models reported in Tables IX, X, and XI applying other methodologies: Ordinary least squares (OLS) and panel data random-fixed effects models lagging one period as the independent variables to control for endogeneity issues. For the influence of ownership in performance (Table IX), the results of the panel data fixed effects models (we focus on fixed effects as the Hausman test is significant) are the same. When applying OLS, we find that *SSH*, *TSH*, *NLSH*, and *OWNCON* negatively impact firm performance while *HHI* positively impacts firm performance. These results highlight the importance of applying econometric techniques that control for endogeneity and unobservable heterogeneity. Consequently, we just repeat the models related to the moderating role of the

institutional setting, applying panel data random-fixed effects; the results are similar but for the moderating effects related to the disclosure index that turn out to be non-significant. The differences found may be due to the methodological approach used. GMM is considered the correct empirical strategy for this type of study due to inherent endogeneity in the ownership-performance relationship (Pindado and Requejo, 2015). Finally, we drop Kuwaiti observations from models reported in Tables IX to XI since as country is the most represented in the sample. The results are similar.

4. Conclusions

Although previous studies have demonstrated the uneven distribution of ownership concentration and the presence of different large shareholders across supranational regions and countries, research on this phenomenon is specifically lacking in the GCC region. We provide a systematic analysis of the ultimate ownership structure of listed firms in GCC countries (ownership concentration, shareholder identity, and the separation between ownership and control) and its evolution during 2009–2015. Additionally, we analyse the ownership structure and firm performance relationship and the moderating role of the formal institutional country setting, controlling for unobservable heterogeneity and endogeneity.

We find significant cross-firm and cross-country differences, possibly due to institutional variation across countries. High ownership concentration in state and family hands, presence of pyramids and holding structures, and low occurrence of widely held corporations are common characteristic among listed firms in GCC countries. These structures are common in other natural resource-based economies (e.g. Chile), allowing dominant economic and social players to tunnel and extract rents, which suggests the existence of principal–principal conflicts. We find evidence of higher ownership concentration in financial firms in Saudi Arabia, the UAE, and Bahrain compared to those in Qatar, Oman, and Kuwait. The ownership concentration increases in Oman, Qatar, and Bahrain but remains stable in Saudi Arabia, Kuwait, and the UAE. These findings may signal the need for policymakers to foster regulatory changes to increase transparency and investor protection. Along with the uneven ownership concentration across countries, it is important to analyse the identity of shareholders and the controlling structures used by blockholders. In line with Basco *et al.* (2020), the importance of families as the largest shareholders varies significantly

between countries, with Qatar exhibiting the lowest proportion of families as the largest shareholders and the UAE exhibiting the largest proportion. Additionally, the importance of the state as the largest shareholder is particularly visible in Bahrain, Qatar, and the UAE. While pyramid ownership structures are more frequent in Kuwait, cross-holding structures are mainly used in the UAE.

In line with the current state of knowledge linking corporate governance and institutions, we observe that the diversity of the institutional context across countries is related to particular characteristics in ultimate ownership structures. Accordingly, although after controlling for possible endogeneity issues, we do not find any significant influence of ownership on firm performance. However, the analysis changes when considering the moderating effect of institutional country settings. For instance, when disclosure of information and control of corruption is high and the risk of investment is low, other large blockholders have more incentives to monitor large shareholders, which results in a positive impact on firm performance.

4.1 Contributions

Our study has theoretical and practical contributions. First, by using fact-based research approach (Hambrick, 2007) and following a context-sensitive approach (Bamberger, 2008), our article contributes to the current debate on ownership concentration in emerging countries. In line with other emerging markets, ownership concentration in the GCC region is high and the state and families are the principal shareholders of listed firms. This seems to be natural given the sociocultural and economic developmental stage of all GCC members. The active participation of the state in the socioeconomic development and the business families in supporting and bringing legitimacy to the states create a symbiosis that is reflected in the ownership structure. Additionally, we contribute to the debate on the effect of ownership on firm performance. Ownership concentration can be considered as a source of Type II agency problems, but the primary evidence of our findings indicates that this is not the case in the GCC context. Further, our empirical analyses show that the formal institution context acts as a moderator in the ownership concentration-firm performance relationship within the GCC region. Future studies in this research stream should acknowledge the importance of a context-sensitive approach to better understand the importance and consequences of ownership concentration on firm outcomes.

Our article also has policy implications. First, in the GCC, due to high ownership concentration, the importance of states and families as large shareholders, and the use of control-enhancing mechanisms that are aggravated by low disclosure of information and protection of minority shareholders, potential Type II agency problems appear. Policymakers should encourage and recommend corporate governance practices to overcome agency problems by increasing the social awareness of accountability. Second, as our findings reveal the importance of institutional context as the driver of ownership concentration-firm performance relationship, policymakers should tailor context-sensitive policies adapting them to a country's formal and informal institutional environment. This is aligned with IMF suggestions and recommendations for the region to focus on stock market reforms by enhancing corporate governance practices and investor protection regulation, removing restrictions on foreign ownership, and encouraging financial market competition (IMF, 2018). Third, we find evidence that even with the structural changes introduced by GCC states (related to legal protection for minority shareholders and corporate governance practices, among others) after the 2008 financial crisis, ownership concentration is a rigid structure. As a control mechanism and a tool to protect owners' economic endowment and power, ownership concentration seems to be embedded in the region's economic actors. It will take some time to balance institutional reforms.

4.2 Future line of research

While this study is one of the first attempts to map the ultimate ownership in listed firms across GCC countries, it has several limitations that not only represent the boundaries of its contributions but also provide opportunities for future research on. First, our article focuses on GCC countries and its results cannot be generalised to other Arab countries. Future articles should address this limitation and investigate ownership concentration and owners' identity in listed firms across the Arab world. This line of research could help contextualise not only the particular phenomenon of ownership concentration in the Arab world but also theory by linking agency theory and the institutional-based view. Second, future studies should focus on the effect of shareholder identity and separation between ownership and control in the GCC context. This line of research could test some assumptions that we considered in this article in terms of Type II agency problems. Finally, beyond the importance of ownership concentration, the identity of large shareholders and the separation of ownership and control, we recommend exploring corporate governance structures

and practices in GCC listed firms. Specifically, future research may explore not only the characteristics of boards of directors but also board tasks (best practices).

REFERENCES

Abdallah, A.A-N. and Ismail, A.K. (2017), "Corporate governance practices, ownership structure, and corporate performance in the GCC countries", *Journal of International Financial Markets, Institutions and Money*, Vol. 46, pp. 98-115.

Aguilera, R.V. and Crespi-Cladera, R. (2016), "Global corporate governance: On the relevance of firms' ownership structure", *Journal of World Business* Vol. 51, pp. 50-57.

Aguilera, R.V. and Jackson, G. (2003), "The cross-national diversity of corporate governance: Dimensions and determinants", *The Academy of Management Review*, Vol. 28 No. 3, pp. 447–465.

Almudehki, N. and Zeitun, R. (2012), "Ownership structure and corporate performance: Evidence from Qatar", Working paper, SSRN Electronic Journal, 29 September.

Al-Awfi, Y. and Vergos, K. (2017), "Determinants of ownership concentration in the Middle East and North of Africa (MENA) region", Working paper, SSRN Electronic Journal, 13 February.

Al-Malkawi, H-A.N., Pillai, R., and Bhatti, M.I. (2014), "Corporate governance practices in emerging markets: The case of GCC countries", *Economic Modelling,* Vol. 38, pp. 133-141.

Arellano, M. and Bond. S. (1991), "Some test of specification for panel data: Montecarlo evidence and an application to employment equations", *Review of Economics Studies*, Vol. 58, pp. 277-297.

Armitage, S., Hou, W., Sarkar, S., and Talaulicar, T. (2017). "Corporate governance challenges in emerging economies", *Corporate Governance: An International Review*, Vol. 25 No. 3, pp. 148–154.

Attig, N., El Ghoul, S., and Guedhami, O. (2009), "Do multiple large shareholders play a corporate governance role? Evidence from East Asia", *Journal of Financial Research*, Vol. 32, pp. 395-422.

Awartani B., Belkhir M., Boubaker S., and Maghyereh A. (2016), "Corporate Debt Maturity in the MENA Region: Does institutional Quality Matter?", *International Review of Financial Analysis*, Vol. 46, pp. 309–325.

Bajrei, S., Ismail, S., and Mohd Nor, S. (2018), "Panel data analysis of ownership structure and board effectiveness influence on GCC bank performance", *Economic Annals-XXI*, Vol. 172, pp. 4-8.

Bamberger, P. (2008), "From the Editors Beyond Contextualization: Using Context Theories to Narrow the Micro-Macro Gap in Management Research", *Academy of Management Journal*, Vol. 51 No. 5, pp. 839–846.

Barako, D.G., Hancock, P., and Izan, H.Y. (2006), "Factors influencing voluntary disclosure by Kenyan companies", *Corporate Governance: An International Review*, Vol. 14 No. 2, pp. 107-125.

Basco, R., Omari, Y., and Abouchkaier, L. (2020), "Family Business Ecosystem in United Arab Emirates", available at: https://familyfirmblog.files.wordpress.com/2020/02/family-business-ecosystem-in-uae.pdf

Baumann, R. (2009), *El comercio entre los países "BRICS"*, Comisión Económica para América Latina y el Caribe, Santiago de Chile.

Berle, A. and Means, G. (1932), *The modern corporation and private property*, Harcourt, Brace and World, New York

Bley, J. and Chen, K.H. (2006), "Gulf Cooperation Council (GCC) stock markets: The dawn of a new era", *Global Finance Journal*, Vol. 17, pp. 75-91.

Boubaker, S. and Labégorre, F. (2008), "Ownership structure, corporate governance and analyst following: A study of French listed firms", *Journal of Banking and Finance*, Vol. 32, pp. 961-976.

Boubakri, N., Cosset, J.C., and Guedhami, O. (2005), "Postprivatization corporate governance: The role of ownership structure and investor protection", *Journal of Financial Economics*, Vol. 76 No. 2, pp. 369-399.

Boyd, B.K. and Solarino, A.M. (2016), "Ownership of corporations: A review, synthesis, and research agenda", *Journal of Management*, Vol. 42 No. 5, pp. 1282–1314.

Buchuk, D., Larrain, B., Munoz, F., and Urzua, F. (2014), "The internal capital markets of business groups: Evidence from intra-group loans", *Journal of Financial Economics* Vol. 112 No. 2, pp. 190-212.

Carney, R.W. and Child, T.B. (2013), "Changes to the ownership and control of East Asian corporations between 1996 and 2008: The primacy of politics", *Journal of Financial Economics*, Vol. 107, pp. 494-513.

Chau, G. and Gray, S.J. (2010), "Family ownership, board independence and voluntary disclosure: Evidence from Hong Kong", *Journal of International Accounting, Auditing and Taxation*, Vol. 19 No. 2, pp. 3-39.

Chong, A. and López-de-Silanes, F. (2007). *Investor protection and corporate governance: Firm-level evidence across Latin America*, Stanford University Press, Palo Alto, CA; World Bank, Washington, DC; Inter-American Development Bank, Washington, DC.

Claessens, S., Djankov, S., and Lang, L.H.P. (2000). "The separation of ownership and control in East Asian Corporations", *Journal of Financial Economics*, Vol. 58, pp. 81-112.

De Miguel, A., Pindado, J., and de la Torre, C. (2003), "Ownership structure and firm value: new evidence from Spain", *Strategic Management Journal*, Vol. 25 No. 12, pp. 1199-1207.

Demsetz, H. and Lehn, K. (1985), "The structure of corporate ownership: Causes and consequences". *Journal of Political Economy*, Vol. 93 No. 6, pp. 1155-1177.

Demsetz, H. and Villalonga, B. (2001), "Ownership structure and corporate performance", *Journal of Corporate Finance*, Vol. 7 No. 3, pp. 209-233.

Douma S., Rejie G., and Rezaul K. (2006), "Foreign and domestic ownership, business groups, and firm performance: evidence from a large emerging market", *Strategic Management Journal*, Vol. 27, pp. 637-657.

Eulaiwi, B., Al-Hadi, A., Taylor, G., Al-Yahyaee, K.H., and Evans, J. (2016), "Multiple directorships, family ownership and the board nomination committee: International evidence from the GCC", *Emerging Markets Review*, Vol. 28, pp. 61-88.

Faccio M. and Lang, L.H.P. (2002), "The ultimate ownership of Western European corporations", *Journal of Financial Economics*, Vol. 65 No. 3, pp. 365-395.

GCC Statistics (2018), "GCC statistics at a Glance 2017", available at: https://gccstat.org/images/gccstat/docman/publications/_____Statistical_Glance_2018_-_.pdf

Goergen, M. and Renneboog, L. (2001), "Investment policy, internal financing and ownership concentration in the UK", *Journal of Corporate Finance*, Vol. 7 No. 3, pp. 257-284.

González, M., Molina, C.A., Pablo, E., and Rosso, J.W. (2017), "The effect of ownership concentration and composition on dividends: Evidence from Latin America", *Emerging Markets Review*, Vol. 30, pp. 1–18.

Hambrick, D.C. (2007), "The Field of Management's Devotion to Theory: Too Much of a Good Thing?", *Academy of Management Journal*, Vol. 50 No. 6, pp. 1346–1352.

Hanieh, A. (2011), *Capitalism and class in the Gulf Arab States*, Palgrave Macmillan, New York.

Haniffa, R.M. and Cooke, T.E. (2002), "Culture, corporate governance and disclosure in Malaysian corporations", *Abacus*, Vol. 38 No. 3, pp. 317–349.

Herfindahl, O.C. (1950), *Concentration in the U.S. steel industry*, Dissertation, Columbia University, New York.

Hirschman, A.O. (1945), *National power and the structure of foreign trade*, University of California Press, Berkeley.

Holderness, C.G. (2016a), "Problems using aggregate data to infer individual behavior: Evidence from law, finance, and ownership concentration", *Critical Finance Review*, Vol. 5, pp. 1-40.

Holderness, C.G. (2016b), "Law and ownership reexamined", *Critical Finance Review*, Vol. 5, pp. 41-83.

Huafang, X. and Jianguo, Y. (2007), "Ownership structure, board composition and corporate voluntary disclosure: Evidence from listed companies in China", *Managerial Auditing Journal*, Vol. 22 No. 6, pp. 604-619.

IMF (2017), "Gulf Cooperation Council: The economic outlook and policy challenges in the GCC countries", available at: https://www.imf.org/en/Publications/Policy-Papers/Issues/2017/12/14/pp121417gcc-economic-outlook-and-policy-challenges

IMF (2018), "Gulf Cooperation Council: How developed and inclusive are financial systems in the GCC?", available at: https://www.imf.org/en/Publications/Policy-Papers/Issues/2018/12/04/pp120618gcc-how-developed-and-inclusive-are-financial-systems-in-the-gcc

Jara-Bertín, M., López-Iturriaga, F., and López de Foronda, O. (2008), "The contest to the control in European family firms: How other shareholders affect firm value", *Corporate Governance: An International Review*, Vol. 16, pp. 146-159.

Jensen, M.C. (1986), "Agency costs of free cash flows, corporate finance, and takeovers", *The American Economic Review*, Vol. 76 No. 2, pp. 323-329.

Jensen, M.C. and Meckling, W.H. (1976), "Theory of the firm: managerial behavior, agency costs and ownership structure", *Journal of Financial Economics*, Vol. 3 No. 4, pp. 305-360.

Jiang, G., Lee, C.M.C., and Yue, H. (2010), "Tunneling through intercorporate loans: The China experience", *Journal of Financial Economics*, Vol. 98, pp. 1-20.

Joh, S.W. (2003), "Corporate governance and firm profitability: evidence from Korea before the economic crisis", *Journal of Financial Economics*, Vol. 68 No. 2, pp. 287-322.

Khan, T.S. and Onder, H. (2018). "Staying the course on reforms – in focus: Water for prosperity and development", Working paper 131955, World Bank Group, 1 November.

Kleinbaum, D.G., Kupper, L.L., and Muller, K.E. (1998), *Applied regression analysis and other multivariate methods*, PWS-Kent Publishing Co, Boston.

Kim, Y.H., Rhim, J.C., and Friesner, D.L. (2007), "Interrelationships among capital structure, dividends, and ownership: Evidence from South Korea", *Multinational Business Review*, Vol. 15 No. 3, pp. 25-42.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R. (1998), "Law and finance", *Journal of Political Economy*, Vol. 106, pp. 1113-1155.

La Porta, R., Lopez-de-Silanes, F., and Shleifer, A. (1999), "Corporate ownership around the World", *The Journal of Finance*, Vol. 54 No. 2, pp. 471-517.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R. (2000), "Investor protection and corporate governance", *Journal of Financial Economics*, Vol. 58, pp. 3-27.

Lins, K.V. (2003). "Equity ownership and firm value in emerging markets", *Journal of Financial and Quantitative Analysis*, Vol. 38, pp. 159–184.

Martinez-Garcia, I., Basco, R., and Gomez-Anson, S. (2020). "Dancing with giants: Contextualizing state and family ownership effects on firm performance in the Gulf Cooperation Council", *Journal of Family Business Strategy*, forthcoming.

Morck, R., Wolfenzon, D. and Yeung, B. (2005), "Corporate governance, economic entrenchment, and growth", *Journal of Economic Literature*, Vol. 43 No. 3, pp. 655-720.

Morgan, G., Campbell, J., Crouch, C., Pedersen, O.K., and Whitley, R. (2010), *The Oxford handbook of comparative institutional analysis*, Oxford University Press, Oxford.

Omran, M.M., Bolbol, A., and Fatheldin, A. (2008). "Corporate governance and firm performance in Arab equity markets: Does ownership concentration matter?", *International Review of Law and Economics*, Vol 28, pp. 32-45.

Opler, T.C. and Titman, S. (1994), "Financial distress and corporate performance", *The Journal of Finance*, Vol. 49 No. 3, pp. 1015-1040.

Patelli, L. and Prencipe, A. (2007), "The relationship between voluntary disclosure and independent directors in the presence of dominant shareholder", *European Accounting Review*, Vol. 16, pp. 5-33.

Pindado, J. and Requejo, I. (2015), "Panel data: A methodology for model specification and testing", *Wiley Encyclopedia of Management*, Vol. 4, https://doi.org/10.1002/9781118785317.weom040013

PWC (2018), "Middle East Economy Watch: Ambitious reforms across the region will continue to define 2018 prospects", available at: https://www.pwc.com/m1/en/publications/economy-watch/pdf/me-economy-watch-february-2018.pdf

Qi, D., Wu, W., and Zhang, H. (2000). "Shareholding structure and corporate performance of partially privatized firms: Evidence from listed Chinese companies", *Pacific-Basin Finance Journal*, Vol. 8 No. 5, pp. 587–610.

Prowse, S. (1997), "Corporate control and commercial banks", *Journal of Financial Research*, Vol. 20 No. 4, pp. 509-527.

Richter, A. and Weiss, C. (2013), "Determinants of ownership concentration in public firms: The importance of firm-, industry- and country-level factors", *International Review of Law and Economics*, Vol. 33, pp. 1-14.

Rothwell, R. (1989), "Small firms, innovation and industrial change", *Small business economics*, Vol. 1, pp. 51-64.

Sánchez-Ballesta, J.P. and García-Meca, E. (2007), "A meta-analytic vision of the effect of ownership structure on firm performance", *Corporate Governance: An International Review*, Vol. 15 No. 5, pp. 879-892

Santos, A.O. (2015), "Integrated ownership and control in the GCC corporate sector" Working Paper, IMF, 3 August.

Spamann, H. (2010), "The "Antidirector Rights Index" revisited", *The Review of Financial Studies*, Vol. 23 No. 2, pp. 467–486.

Ştefănescu C.A. (2012), "Ownership concentration and corporate governance disclosure - The case of financial institutions", *The Annals of the University of Oradea*, Vol. 21, pp. 830-836.

Stoney, C. and Winstanley, D. (2001), "Stakeholding: Confusion or utopia? Mapping the conceptual terrain", *Journal of Management Studies*, Vol. 38, pp. 603-626.

Touil, M. and Mamoghli, C. (2020), "Institutional environment and determinants of adjustment speed to the target capital structure in the MENA region", *Borsa Istanbul Review,* Vol. 20 No. 2, pp. 121-143

Tsamenyi, M., Enninful, E., and Onumah, J. (2007), "Disclosure and corporate governance in developing countries: Evidence from Ghana", *Managerial Auditing Journal*, Vol. 22 No. 3, pp. 319-334.

Uddin, M.H., Halbouni, S., and Raj, M. (2014), "Performance of government-linked firms listed on two stock exchanges of the United Arab Emirates: An empirical study", *Emerging Markets Finance and Trade*, Vol. 50, pp. 212-236.

Villalonga, B. and Amit, R. (2006), "How do family ownership, control and management affect firm value?", *Journal of Financial Economics*, Vol. 80 No. 2, pp. 385–417.

Wang, K.T. and Shailer, G. (2015), "Ownership concentration and firm performance in emerging markets: A meta-analysis", *Journal of Economic Surveys*, Vol. 29 No. 2, pp. 199-229.

World Bank (2019), "World Bank national accounts data and OECD National Accounts data files", available at: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD

Young, N.M., Peng, M.W., Ahlstrom, D., Bruton, G.D., and Jiang, Y. (2008), "Corporate governance in emerging economies: A review of the principal-principal perspective", *Journal of Management Studies*, Vol. 45, pp. 196–220.

Zeitun, R. (2014), "Corporate governance, capital structure and corporate performance: Evidence from GCC countries", *Review of Middle East Economics and Finance*, Vol. 10, pp

Table I: Sample description

$\%_B$ denotes Bahraini firm-year observations over the total Bahraini sub-sample, $\%_K$ denotes Kuwaiti firm-year observations over the total Kuwaiti sub-sample, $\%_O$ denotes Omani firm-year observations over the total Omani sub-sample, $\%_Q$ denotes Qatari firm-year observations over the total Qatari sub-sample, $\%_{SA}$ denotes Saudi Arabian firm-year observations over the total Saudi Arabian sub-sample, $\%_{UAE}$ denotes the UAE firm-year observations over the total UAE sub-sample, and $\%_{GCC}$ denotes country firm-year observations over GCC firm-year observations.

Year	GCC N	GCC %	Bahrain N	$\%_B$	$\%_{GCC}$	Kuwait N	$\%_K$	$\%_{GCC}$	Oman N	$\%_O$	$\%_{GCC}$	Qatar N	$\%_Q$	$\%_{GCC}$	Saudi Arabia N	$\%_{SA}$	$\%_{GCC}$	UAE N	$\%_{UAE}$	$\%_{GCC}$
2009	574	13.36	37	13.55	6.45	164	13.28	28.57	116	14.70	20.21	35	12.73	6.10	117	11.95	20.38	105	14.09	18.29
2010	577	13.43	35	12.82	6.07	160	12.96	27.73	113	14.32	19.58	36	13.09	6.24	127	12.97	22.01	106	14.23	18.37
2011	603	14.04	40	14.65	6.63	172	13.93	28.52	109	13.81	18.08	38	13.82	6.30	138	14.10	22.89	106	14.23	17.58
2012	617	14.36	40	14.65	6.48	178	14.41	28.85	109	13.81	17.67	42	15.27	6.81	141	14.40	22.85	107	14.36	17.34
2013	629	14.64	40	14.65	6.36	182	14.74	28.93	113	14.32	17.67	41	14.91	6.52	147	15.02	23.37	106	14.23	16.85
2014	643	14.97	40	14.65	6.22	191	15.47	29.70	114	14.45	17.73	41	14.91	6.38	151	15.42	23.48	106	14.23	16.49
2015	653	15.20	41	15.02	6.28	188	15.22	28.79	115	14.58	17.61	42	15.57	6.43	158	16.14	24.20	109	14.63	16.69
Total	4,296	100	273	100	6.35	1,235	100	28.75	789	100	18.37	275	100	6.40	979	100	22.79	745	100	17.34

Table II: Variables

Variables	Description
Ownership Structure Variables	
Ownership Concentration	
FSH, SSH, TSH	Voting rights of the largest shareholder, the second-largest shareholder, and the third-largest shareholder, respectively (source: Thomson Reuters Zawya database).
NLSH	Number of significant shareholders (those holding more than 5 percent of voting rights) (source: estimated from data in Thomson Reuters Zawya database).
OWNCON	Sum of the voting rights of all significant owners (those holding more than 5 percent of voting rights) (source: estimated from data in Thomson Reuters Zawya database).
HHI	The normalized Herfindahl-Hirschman Index: $HHI_{it} = \dfrac{\Sigma_{j=1}^{N}\left(\frac{SH_j}{OWNCON}\right)^2 - \frac{1}{N}}{1 - \frac{1}{N}}$ for N > 1 and $HHI_{it} = 1$ for N=1 (source: estimated from data in Thomson Reuters Zawya database).
Largest Shareholder Identity	
FAMILY	Dummy variable equal to 1 when a family or an individual controls the firm as the largest shareholder with a threshold over 10 percent and 0 otherwise (source: estimated from data in Thomson Reuters Zawya database).
STATE	Dummy variable equal to 1 when a GCC government, local authority, government agency, or GCC government sovereign fund controls the firm as the largest shareholder with a threshold over 10 percent and 0 otherwise (source: estimated from data in Thomson Reuters Zawya database).
INSTITUTIONAL	Dummy variable equal to 1 when a mutual, pension, or hedge fund; a company classified by Thompson Reuters as investment advisor; or a foreign sovereign fund controls the firm as the largest shareholder with a threshold over 10 percent and 0 otherwise (source: estimated from data in Thomson Reuters Zawya database).
CORPORATION	Dummy variable equal to 1 when a non-financial corporation controls the firm as the largest shareholder with a threshold over 10 percent and 0 otherwise (source: estimated from data in Thomson Reuters Zawya database).
FINANCIAL INSTITUTION	Dummy variable equal to 1 when a bank or insurance company controls the firm as the largest shareholder with a threshold over 10 percent and 0 otherwise (source: estimated from data in Thomson Reuters Zawya database).
HOLDING	Dummy variable equal to 1 when a holding company controls the firm as the largest shareholder with a threshold over 10 percent and 0 otherwise (source: estimated from data in Thomson Reuters Zawya database).
WIDELY HELD	Dummy variable equal to 1 when there is no controlling shareholder with a threshold over 10 percent and 0 otherwise (source: estimated from data in Thomson Reuters Zawya database).
Control-Enhancing Mechanisms	
PYRAMIDS	Dummy variable equal to 1 when the controlling shareholder (direct) is a financial or non-financial corporation and the last entity in the control chain is a family, an individual, a government institution, an institutional investor, or a private firm with a threshold over 10 percent and 0 otherwise (source: estimated from data in Thomson Reuters Zawya database).
WIDELY HELD FIRMS	Dummy variable equal to 1 when the controlling shareholder (direct) is a financial or non-financial corporation and the last in the control chain is a listed firm with no controlling shareholder with a threshold over 10 percent and 0 otherwise (source: estimated from data in Thomson Reuters Zawya database).
CROSS-HOLDING	Dummy variable equal to 1 when the firm controls at least 10 percent of its own stocks or if it is controlled by another firm that is in turn controlled by the first one and 0 otherwise (source: estimated from data in Thomson Reuters Zawya database).
CONTROLLING OWNER ALONE	Dummy variable equal to 1 when there is a single controlling owner and 0 otherwise (source: estimated from data in Thomson Reuters Zawya database).

Table II (continued): Variables

Firm Variables	
AVALUE	Firm industry-adjusted market to book ratio defined as: firm market value or capitalization plus the book value of debt divided by the book value of total assets for each firm and year minus the industry mean each year (source: estimated from data in Thomson Reuters Zawya database, ORBIS database, and GCC stock markets reports)
ASSETS	Book value of total assets (billon USD) (source: Thomson Reuters Zawya database and companies' annual reports).
AGE	Firm age defined as the number of years since the foundation of the firm (source: Thomson Reuters Zawya database).
LEV	Leverage defined as: book value of total debt/book value of total assets (source: estimated from data in Thomson Reuters Zawya database and companies' annual reports).
FINANCIAL	Dummy variable equal to 1 if firm belongs to the financial sector (source: estimated from data in Thomson Reuters Zawya database).
NON-FINANCIAL	Dummy variable equal to 1 if the firm belongs to a non-financial sector (source: estimated from data in Thomson Reuters Zawya database).
Country Variables	
GDP	Gross domestic product in 2010 constant prices (billon USD) (source: World Development Indicators)
COMMON LAW	Dummy variable equal to 1 if the commercial law is English common law and 0 otherwise (source: Prof. Andrei Shleifer webpage)
CIVIL LAW	Dummy variable equal to 1 if the commercial law is French commercial code and 0 otherwise (source: Prof. Andrei Shleifer webpage)
LAW AND ORDER	Captures the strength and impartiality of the legal system and the popular observance of the law; lower rating = higher risk; range: 0–6 (source: ICRG)
DISCLOSURE INDEX	Captures review and approval requirements and internal, immediate, and periodic disclosure requirements for related-party transitions; range: 0–10 (source: Doing Business)
GOVERNMENT STABILITY	Captures the government's ability to carry out its declared program(s) and its ability to stay in office by assessing government unity, legislative strength, and popular support; lower rating = higher risk; range: 0–12 (source: ICRG)
CONTROL OF CORRUPTION	Captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests; range: -2.5–2.5 (source: Worldwide Governance Indicators)
INVESTMENT PROFILE	Captures the factors affecting the risk of investment by assessing contract viability/expropriation, profits repatriation, and payment delays; lower rating = higher risk; range: 0–12 (source: ICRG)

Table III: Comparative table

	Classens et al. (2000)	Faccio and Lang (2002)	Carney and Child (2013)	This Article
Sample				
Number of observations	2,980	5,232	1,386[3]	4,713
Region	East Asia	Western Europe	East Asia	GCC
Largest Shareholder				
Largest shareholder control rights	19.77	38.48	43.73[4] (31.5)	32.95
Dominating shareholder identity	FAMILY	FAMILY	FAMILY	STATE
% Family	40.99[1]	44.29	46.1	15.89
% State	5.98[1]	4.14	16.2	22.53
% Widely held	19.75[1]	36.93	22.9	10.19
Control-Enhancing Mechanisms				
% Pyramids	38.70	19.13[2] (12.07)	30.9[4] (23.8)	20.16
% Widely held firms	33.30[1]	10.71	11.6	3.77
% Cross-holdings	10.1	0.51	2.6	0.86
% Controlling owner alone	67.8	53.99[2] (34.05)	86.1[4] (66.4)	18.37
Differences between Financial and Non-Financial Firms				
Dominating shareholder NON-FINANCIAL firms	-	FAMILY—48.15	-	STATE—21.34
Dominating shareholder FINANCIAL firms	-	WIDELY HELD—39.92	-	STATE—24.14
% Non-financial firms	-	81.7	-	64.13

1 Classens et al. (2000) do not report results for the whole sample; they segregate by country. Figures are approximated for the whole sample.
2 Faccio and Lang (2002) use only 3,300 firms with controlling shareholders. Figures are approximated for the whole sample (in parentheses).
3 Carney and Child (2013) compare Classens et al. (2000) database with 1,386 East Asian firms in 2008. We only report figures for 2008 data.
4 Carney and Child (2013) use only 999 firms with controlling shareholders. Figures are approximated for the whole sample (in parentheses).

Table IV: Ownership concentration and mean differences between financial and non-financial firms

FINANCIAL and NON-FINANCIAL denote if the firm belongs to the financial sector or to a non-financial sector, respectively; FSH, SSH, and TSH denote the voting rights of the largest shareholder, the second-largest shareholder, and third-largest shareholder, respectively; NLSH denotes the number of significant shareholders; OWNCON denotes the sum of the voting rights of all significant owners; HHI denotes the normalized Herfindahl-Hirschman Index. For continuous variables, the statistic we use to measure the statistical differences is the Mann-Whitney U test. For dummy variables (a), the statistic used is the Chi-squared test and the descriptive statistic is the frequency. *Statistically significant at the 10 percent level; **Statistically significant at the 5 percent level; ***Statistically significant at 1 percent level.

COUNTRY	VARIABLES	TOTAL	FINANCIAL (1)	NON-FINANCIAL (2)	MANN-WHITNEY U (1) and (2)
BAHRAIN	FSH	35.67	39.45	30.92	7,339***
	SSH	11.65	12.39	10.72	8,032*
	TSH	5.16	4.92	5.47	8,811
	NLSH	2.68	2.54	2.86	8,256
	OWNCON	54.98	58.77	50.21	7,360***
	HHI	0.30	0.29	0.31	8,821
	N	273	152	121	
KUWAIT	FSH	35.49	36.37	35.12	155,152
	SSH	11.24	9.14	12.12	123,573***
	TSH	5.13	3.82	5.69	130,270***
	NLSH	2.75	2.46	2.88	129,744***
	OWNCON	55.16	52.01	56.50	143,253***
	HHI	0.33	0.42	0.30	141,212***
	N	1,235	367	868	
OMAN	FSH	37.57	31.36	39.68	45,483***
	SSH	14.18	14.63	14.02	55,035
	TSH	6.46	5.47	6.80	52,236**
	NLSH	3.05	3	3.07	57,370
	OWNCON	63.39	55.99	65.90	42,777***
	HHI	0.27	0.20	0.30	51,950**
	N	789	200	589	
QATAR	FSH	24.02	15.28	31.41	5,685***
	SSH	4.74	4.70	4.77	9,024
	TSH	1.36	1.32	1.41	9,258
	NLSH	1.44	1.52	1.38	8,858
	OWNCON	30.42	21.89	37.63	6,132***
	HHI	0.57	0.50	0.63	8,098**
	N	275	126	149	
SAUDI ARABIA	FSH	26.27	28.13	25.41	83,869***
	SSH	8.86	10.36	8.17	89,247***
	TSH	2.96	3.55	2.69	92,423***
	NLSH	2.42	2.59	2.35	93,250**
	OWNCON	40.17	44.36	38.25	85,944***
	HHI	0.36	0.33	0.37	102,479
	N	979	308	671	
UAE	FSH	34.90	35.05	34.73	68,980
	SSH	9.64	10.45	8.76	59,438***
	TSH	5.26	5.60	4.90	62,799**
	NLSH	3.16	3.41	2.88	56,127***
	OWNCON	55.39	57.56	53.04	64,443
	IHH	0.35	0.31	0.40	61,019***
	N	745	388	357	
GCC	FSH	32.95	32.32	33.30	2,045,155**
	SSH	10.57	10.38	10.67	2,098,444
	TSH	4.67	4.33	4.85	2,036,505**
	NLSH	2.71	2.73	2.71	2,119,219
	OWNCON	51.70	50.60	52.32	2,027,885**
	HHI	0.34	0.34	0.35	2,112,398
	N	4,296	1,541	2,755	

Table V: Descriptive statistics for country variables

COMMON LAW and CIVIL LAW denote if the commercial law is English common law or French commercial code, respectively; LAW AND ORDER captures the strength and impartiality of the legal system and the popular observance of the law; DISCLOSURE INDEX captures review and approval requirements and internal, immediate, and periodic disclosure requirements for related-party transitions; GOVERNMENT STABILITY captures the government's ability to carry out its declared program(s) and its ability to stay in office by assessing government unity, legislative strength, and popular support; CONTROL OF CORRUPTION captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests; INVESTMENT PROFILE captures the factors affecting the risk of investment by assessing contract viability/expropriation, profits repatriation, and payment delays.

	BAHRAIN	KUWAIT	OMAN	QATAR	SAUDI ARABIA	UAE	GCC
Legal Origin							
COMMON LAW	YES	NO	NO	NO	YES	YES	
CIVIL LAW	NO	YES	YES	YES	NO	NO	
Investor Protection							
LAW AND ORDER	4.71	4.69	5	5	5	4	4.72
DISCLOSURE INDEX	8	4	8	5	8	5.14	6.36
Government Quality							
GOVERNMENT STABILITY	7.10	6.21	9.86	10.71	8.93	10.5	8.89
CONTROL OF CORRUPTION	0.26	-0.02	0.25	1.15	-0.03	1.09	0.45
INVESTOR PROFILE	10.43	9.36	11	9.93	10.57	10.71	10.33

Table VI: Identity of the largest shareholder and control-enhancing mechanisms

FAMILY denotes if a family or an individual controls the firm as the largest shareholder with a threshold over 10 percent; STATE denotes if a GCC government, local authority, government agency, or a GCC government sovereign fund controls the firm as the largest shareholder with a threshold over 10 percent; INSTITUTIONAL denotes if a mutual, pension, hedge, or foreign sovereign fund controls the firm as the largest shareholder with a threshold over 10 percent; CORPORATION denotes if a non-financial corporation controls the firm as the largest shareholder with a threshold over 10 percent; FINANCIAL INSTITUTION denotes if a bank or insurance company controls the firm as the largest shareholder with a threshold over 10 percent; HOLDING denotes if a holding company controls the firm as the largest shareholder with a threshold over 10 percent; WIDELY HELD denotes if there is no controlling shareholder with a threshold over 10 percent; PYRAMIDS denotes if the controlling shareholder (direct) is a financial or non-financial corporation and the last in the control chain is a family, an individual, a government institution, an institutional investor, or a private firm with a threshold over 10 percent; WIDELY HELD FIRMS denotes if the controlling shareholder (direct) is a financial or non-financial corporation and the last in the control chain is a listed firm with no controlling shareholder with a threshold over 10 percent; CROSS-HOLDING denotes if the firm controls at least 10 percent of its own stocks or if it is controlled by another firm that is in turn controlled by the first one; CONTROLLING OWNER ALONE denotes if there is a single controlling owner; FINANCIAL and NON-FINANCIAL denote if the firm belongs to the financial sector or to a non-financial sector, respectively.

COUNTRY	INDUSTRY	LARGEST SHAREHOLDER IDENTITY							CONTROL-ENHANCING MECHANISMS				N
		FAMILY	STATE	INSTITU-TIONAL	CORPO-RATION	FINANCIAL INSTITUTION	HOLDING	WIDELY HELD	PYRAMIDS	WIDELY HELD FIRMS	CROSS-HOLDINGS	CONTROLLING OWNER ALONE	
BAHRAIN	FINANCIAL	11.18	38.16	1.32	5.92	16.45	21.05	5.92	15.13	7.24	0	10.53	152
	NON-FINANCIAL	13.22	54.54	5.79	6.61	0	5.79	14.05	5.79	0.83	0	14.05	121
	TOTAL	12.09	45.42	3.30	6.23	9.16	14.29	9.52	10.99	4.40	0	12.09	273
KUWAIT	FINANCIAL	5.45	10.35	8.99	16.89	17.71	34.60	6.54	26.16	8.17	0.27	26.70	367
	NON-FINANCIAL	12.21	5.53	16.82	25.81	7.03	27.53	5.30	31.80	1.04	0	14.06	868
	TOTAL	10.20	6.96	14.49	23.16	10.20	29.64	5.67	30.12	3.16	0.08	17.81	1,235
OMAN	FINANCIAL	23.5	17.00	13.5	6.00	7.00	32.00	1.00	13.00	0	0	9.00	200
	NON-FINANCIAL	20.03	18.81	7.47	19.86	3.57	30.22	1.02	19.69	3.74	0	17.83	589
	TOTAL	20.91	17.87	9.00	16.35	4.44	30.67	1.01	18.00	2.79	0	15.59	789
QATAR	FINANCIAL	7.94	36.51	0.79	5.56	13.49	2.38	34.13	17.46	1.59	0	26.98	126
	NON-FINANCIAL	0.67	42.95	1.34	12.75	0	16.11	26.17	1.34	11.41	0	42.28	149
	TOTAL	4.00	40.00	1.09	9.45	6.18	9.82	29.82	8.73	6.91	0	35.27	275
SAUDI ARABIA	FINANCIAL	13.31	16.56	1.30	2.27	42.53	16.88	7.14	28.25	16.56	0	21.10	308
	NON-FINANCIAL	19.97	24.59	0.89	16.24	0.15	14.01	24.29	15.05	1.34	0	16.99	671
	TOTAL	17.88	22.06	1.02	11.84	13.48	14.91	18.90	19.20	6.13	0	18.28	979
UAE	FINANCIAL	28.87	39.43	2.32	7.73	11.86	3.87	5.93	15.98	1.80	1.80	14.69	388
	NON-FINANCIAL	17.09	38.66	3.92	19.33	3.08	5.60	12.32	13.45	0.84	8.12	22.41	357
	TOTAL	23.22	39.06	3.09	13.29	7.65	4.70	8.99	14.77	1.34	4.83	18.39	745
GCC	FINANCIAL	16.03	24.14	4.93	8.24	19.34	19.01	7.98	20.51	6.55	0.52	18.69	1,541
	NON-FINANCIAL	15.83	21.34	7.95	19.82	3.41	20.40	11.43	19.96	2.21	1.05	18.18	2,755
	TOTAL	15.89	22.53	6.86	15.66	9.12	19.90	10.19	21.16	3.77	0.86	18.37	4,296

Table VII: The impact of country legal origin and investor protection indexes on ownership concentration, identity of the largest shareholder, and control-enhancing mechanisms

COMMON LAW and CIVIL LAW denote if the commercial law is English common law or French commercial code, respectively; LAW AND ORDER captures the strength and impartiality of the legal system and the popular observance of the law; DISCLOSURE INDEX captures review and approval requirements and internal, immediate, and periodic disclosure requirements for related-party transitions; FSH, SSH, and TSH denote the voting rights of the largest shareholder, the second-largest shareholder, and the third-largest shareholder, respectively; NLSH denotes the number of significant shareholders; OWNCON denotes the sum of the voting rights of all significant owners; HHI denotes the normalized Herfindahl-Hirschman Index; FAMILY denotes if a family or an individual controls the firm as the largest shareholder with a threshold over 10 percent; STATE denotes if a GCC government, local authority, government agency, or a GCC government sovereign fund controls the firm as the largest shareholder with a threshold over 10 percent; INSTITUTIONAL denotes if a mutual, pension, hedge, or foreign sovereign fund controls the firm as the largest shareholder with a threshold over 10 percent; CORPORATION denotes if a non-financial corporation controls the firm as the largest shareholder with a threshold over 10 percent; FINANCIAL INSTITUTION denotes if a bank or insurance company controls the firm as the largest shareholder with a threshold over 10 percent; HOLDING denotes if a holding company controls the firm as the largest shareholder with a threshold over 10 percent; WIDELY HELD denotes if there is no controlling shareholder with a threshold over 10 percent; PYR AMIDS denotes if the controlling shareholder (direct) is a financial or non-financial corporation and the last in the control chain is a family, an individual, a government institution, an institutional investor, or a private firm with a threshold over 10 percent; WIDELY HELD FIRMS denotes if the controlling shareholder (direct) is a financial or non-financial corporation and the last in the control chain is a listed firm with no controlling shareholder with a threshold over 10 percent; CROSS-HOLDING denotes if firm controls at least 10 percent of its own stocks or if it is controlled by another firm that is in turn controlled by the first one; CONTROLLING OWNER ALONE denotes if there is a single controlling owner. For continuous variables, the statistic we use to measure the statistical differences is the Mann-Whitney U test. For dummy variables (a), the statistic used is the Chi-squared test and the descriptive statistic is the frequency. *Statistically significant at the 10 percent level; **Statistically significant at the 5 percent level; ***Statistically significant at 1 percent level.

VARIABLES	LEGAL ORIGIN		LAW AND ORDER		DISCLOSURE INDEX		Mann-Whitney U/Chi-Squared Test (a)		
	COMON LAW (1)	CIVIL LAW (2)	ABOVE (3)	BELOW (4)	ABOVE (5)	BELOW (6)	(1) and (2)	(3) and (4)	(5) and (6)
	N = 1,997	N = 2,299	N = 2,043	N = 2,253	N = 2,041	N = 2,255			
Ownership Concentration									
FSH	30.77	34.83	30.33	35.32	31.89	33.90	1,989,026***	1,968,542***	2,176,019***
SSH	9.53	11.47	10.36	10.76	11.29	9.92	1,987,285***	2,220,654**	2,098,123***
TSH	4.12	5.14	4.10	5.18	4.61	4.72	2,106,035***	2,062,613***	2,272,787
NLSH	2.73	2.70	2.53	2.88	2.70	2.73	2,281,785	1,997,531***	2,293,482
OWNCON	47.88	55.03	47.83	55.22	51.13	52.22	1,919,928***	1,912,926***	2,234,233*
HHI	0.35	0.34	0.35	0.34	0.32	0.37	2,276,628	2,243,722	2,126,900***
Largest Shareholder Identity									
FAMILY (a)	19.08	13.14	17.18	14.74	18.28	13.75	28.225***	4.789**	16.429***
STATE (a)	31.60	14.66	22.86	22.24	23.57	21.60	175.667***	0.237	2.383
INSTITUTIONAL (a)	2.10	11.00	4.11	9.36	4.41	9.09	132.413***	46.242***	36.711***
CORPORATION (a)	11.62	19.18	13.26	17.84	12.94	18.23	46.291***	16.997***	23.553***
FINANCIAL INSTITUTION (a)	10.72	7.74	9.00	9.23	9.41	8.87	11.396***	0.066	0.374
HOLDING (a)	11.02	27.62	20.31	19.53	20.92	18.98	184.827***	0.413	2.532
WIDELY HELD (a)	13.92	6.96	13.46	7.23	10.73	9.71	56.563***	45.357***	1.213
Control-Enhancing Mechanism									
PYRAMIDS (a)	16.42	23.40	17.33	22.75	17.64	22.44	32.321***	19.396***	15.340***
WIDELY HELD FIRMS (a)	4.11	3.45	4.94	2.71	4.61	3.02	1.156	14.765***	7.646***
CROSSHOLDINGS (a)	1.80	0.04	0	1.64	0	1.64	38.735***	33.843***	33.780***
CONTROLLING OWNER ALONE (a)	17.48	19.14	19.53	17.31	16.41	20.13	1.970	3.522*	9.886***

Table VIII: The impact of government quality indexes on ownership concentration, identity of the largest shareholder, and control-enhancing mechanisms

GOVERNMENT STABILITY captures the government's ability to carry out its declared program(s) and its ability to stay in office by assessing government unity, legislative strength, and popular support; CONTROL OF CORRUPTION captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests; INVESTMENT PROFILE captures the factors affecting the risk of investment by assessing contract viability/expropriation, profits repatriation, and payment delays; FSH, SSH, and TSH denote the voting rights of the largest shareholder, the second-largest shareholder, and the third-largest shareholder, respectively; NLSH denotes the number of significant shareholders; OWNCON denotes the sum of the voting rights of all significant owners; HHI denotes the normalized Herfindahl-Hirschman Index; FAMILY denotes if a family or an individual controls the firm as the largest shareholder with a threshold over 10 percent; STATE denotes if a GCC government, local authority, government agency, or a GCC government sovereign fund controls the firm as the largest shareholder with a threshold over 10 percent; INSTITUTIONAL denotes if a mutual, pension, hedge, or foreign sovereign fund controls the firm as the largest shareholder with a threshold over 10 percent; CORPORATION denotes if a non-financial corporation controls the firm as the largest shareholder with a threshold over 10 percent; FINANCIAL INSTITUTION denotes if a bank or insurance company controls the firm as the largest shareholder with a threshold over 10 percent; HOLDING denotes if a holding company controls the firm as the largest shareholder with a threshold over 10 percent; WIDELY HELD denotes if there is no controlling shareholder with a threshold over 10 percent; PYRAMIDS denotes if the controlling shareholder (direct) is a financial or non-financial corporation and the last in the control chain is a family, an individual, a government institution, an institutional investor, or a private firm with a threshold over 10 percent; WIDELY HELD FIRMS denotes if the controlling shareholder (direct) is a financial or non-financial corporation and the last in the control chain is a listed firm with no controlling shareholder with a threshold over 10 percent; CROSS-HOLDING denotes if firm controls at least 10 percent of its own stocks or if it is controlled by another firm that is in turn controlled by the first one; CONTROLLING OWNER ALONE denotes if there is a single controlling owner. For continuous variables, the statistic we use to measure the statistical differences is the Mann-Whitney U test. For dummy variables (a), the statistic used is the Chi-squared test and the descriptive statistic is the frequency. *Statistically significant at the 10 percent level; **Statistically significant at the 5 percent level; ***Statistically significant at 1 percent level.

VARIABLES	GOVERNMENT STABILITY		CONTROL OF CORRUPTION		INVESTMENT PROFILE		Mann-Whitney U/Chi-Squared Test (a)		
	ABOVE (1)	BELOW (2)	ABOVE (3)	BELOW (4)	ABOVE (5)	BELOW (6)	(1) and (2)	(3) and (4)	(5) and (6)
	N = 2,788	N = 1,508	N = 1,020	N = 3,276	N = 2,786	N = 1,510			
Ownership Concentration									
FSH	31.55	35.53	31.97	33.25	32.70	33.40	1,843,058***	1,582,482**	2,052,025
SSH	10.17	11.31	8.32	11.27	10.85	10.05	1,935,565***	1,346,723***	1,986,127***
TSH	4.41	5.14	4.21	4.81	4.78	4.45	1,969,905***	1,583,454***	2,025,291**
NLSH	2.70	2.74	2.69	2.72	2.82	2.51	1,995,628***	1,579,208***	1,913,791***
OWNCON	49.85	55.13	48.66	52.65	52.27	50.66	1,853,166***	1,536,833***	2,030,897*
HHI	0.35	0.33	0.41	0.32	0.33	0.38	2,101,070	1,510,614***	1,985,737***
Largest Shareholder Identity									
FAMILY (a)	18.79	10.54	18.04	15.23	19.60	9.07	49.830***	4.584**	81.132***
STATE (a)	27.19	13.92	39.31	17.31	27.71	12.98	98.613***	215.791***	121.719***
INSTITUTIONAL (a)	3.84	12.47	2.55	8.21	4.06	12.05	113.942***	38.993***	97.923***
CORPORATION (a)	13.27	20.09	12.25	16.73	12.96	20.66	34.471***	11.778***	43.999***
FINANCIAL INSTITUTION (a)	8.64	10.01	7.25	9.71	8.94	9.47	2.212	5.640**	0.335
HOLDING (a)	16.14	26.86	6.08	24.51	16.58	26.03	70.500***	160.344***	54.783***
WIDELY HELD (a)	12.27	6.37	14.61	8.82	10.27	10.07	37.217***	28.441***	0.043
Control-Enhancing Mechanisms									
PYRAMIDS (a)	16.64	26.66	13.14	22.34	16.87	26.23	60.989***	40.967***	53.248***
WIDELY HELD FIRMS (a)	3.98	3.38	2.84	4.06	3.73	3.84	0.969	3.173*	0.032
CROSSHOLDINGS (a)	1.29	0.07	3.53	0.03	1.29	0.07	17.198***	111.522***	17.237***
CONTROLLING OWNER ALONE (a)	19.23	16.78	22.94	16.94	16.94	20.99	3.912*	18.675***	10.721***

43

Table IX: The effect of ownership on firm performance

Models are estimated using the Generalize Method of Moments (GMM). The dependent variable is AVALUE and denotes firms' industry-adjusted market value, FSH, SSH, and TSH denote the voting rights of the largest shareholder, the second-largest shareholder, and the third-largest shareholder, respectively; NLSH denotes the number of significant shareholders; OWNCON denotes the sum of the voting rights of all significant owners; HHI denotes the normalized Herfindahl-Hirschman Index; AGE (ln) denotes the natural logarithm of the number of years since the foundation of the firm; ASSETS (ln) denotes the natural logarithm of the book value of firm total assets and LEV denotes leverage (book value of total debt/book value of total assets). Values are unstandardized coefficients, with z values in parentheses. Wald's χ^2 is a Wald test of the joint significance of the reported coefficients of the explanatory variables, asymptotically distributed as χ^2 under the null hypothesis of no relationship for all explanatory variables. M^2 is a second order serial correlation test using residuals in first differences, asymptotically distributed as $N(0,1)$ under the null hypothesis of no serial correlation. Hansen is a test of over-identifying restrictions, asymptotically distributed as under χ^2 the null hypothesis of no correlation between the instruments and the error term. Models are estimated with constant; however, the constant is not reported in the table. Each institutional variable is considered individually. Models are estimated with the constant, year-dummy variables, industry dummy variables, and control variables but there are not reported in the table. 54 models are summarized in the table. * $p < 0.10$; **$p < 0.05$; *** $p < 0.01$

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
FSH	0.003	0.002	0.004					
	(0.55)	(0.37)	(0.75)					
SSH		0.006	0.006					
		(0.95)	(1.12)					
TSH			-0.007					
			(-0.63)					
FSH+SSH				0.003				
				(0.68)				
FSH+SSH+TSH					0.001			
					(0.30)			
NLSH						-0.017		
						(-0.53)		
OWNCON							0.001	
							(0.01)	
HHI								0.113
								(1.27)
AGE (ln)	-0.134	-0.107	-0.078	-0.122	-0.122	-0.097	-0.141	-0.141
	(-1.40)	(-1.12)	(-0.83)	(-1.28)	(-1.42)	(-1.07)	(-1.52)	(-1.61)
ASSETS (ln)	-0.579**	-0.519***	-0.438***	-0.580***	-0.575***	-0.574**	-0.564**	-0.693**
	(-2.44)	(-3.29)	(-3.54)	(-2.66)	(-2.85)	(-2.46)	(-3.10)	(-2.07)
LEV	-1.007**	-1.144***	-1.339***	-1.008**	-1.032**	-1.255***	-1.124***	-0.785
	(-2.27)	(-2.82)	(-3.28)	(-2.19)	(-2.36)	(-3.08)	(-2.78)	(-1.57)
Annual effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
M^2	-1.09	-1.22	-1.24	-1.09	-1.17	-1.23	-1.23	-1.11
Hansen	47.48	76.81	97.15	52.57	55.48	64.23	59.04	48.49
Wald's χ^2	54.72***	57.18***	66.50***	54.46***	56.14***	52.31***	57.49***	49.66***
N observations	2,218	2,218	2,218	2,218	2,218	2,218	2,218	2,218
N firms	389	389	389	389	389	389	389	389

Table X: Country legal origin, investor protection and the effect of ownership on firm performance

Models are estimated using the Generalize Method of Moments (GMM). Values are unstandardized coefficients, with z values in parentheses. The dependent variable is AVALUE and denotes firms' industry-adjusted market value, CIVIL LAW denotes if the commercial law is French commercial code; LAW AND ORDER captures the strength and impartiality of the legal system and the popular observance of the law; DISCLOSURE INDEX captures review and approval requirements and internal, immediate, and periodic disclosure requirements for related-party transitions; FSH, SSH, and TSH denote the voting rights of the largest shareholder, the second-largest shareholder, and the third-largest shareholder, respectively; NLSH denotes the number of significant shareholders; OWNCON denotes the sum of the voting rights of all significant owners; HHI denotes the normalized Herfindahl-Hirschman Index. Models are estimated with constant; however, the constant is not reported in the table. Each institutional variable is considered individually. Models are estimated with the constant, year-dummy variables, and control variables (AGE (ln); ASSETS (ln); LEV) but there are not reported in the table. 18 models are summarized in the table. The Wald test of the joint significance of the reported coefficients of the explanatory variables, asymptotically distributed as χ^2 under the null hypothesis of no relationship for all explanatory variables is significant at 0.01 for all models. The second order serial correlation test using residuals in first differences, asymptotically distributed as $N(0,1)$ under the null hypothesis of no serial correlation is not significant for all models. The Hansen test of over-identifying restrictions, asymptotically distributed as under χ^2 the null hypothesis of no correlation between the instruments and the error term is not significant for all models. * $p < 0.10$; **$p < 0.05$; *** $p < 0.01$

Panel A: The effect of first, second or third largest shareholder

Variables		Variables		Variables	
	Model 1A		Model 2A		Model 3A
CIVIL LAW	-0.011	CIVIL LAW	-0.021	CIVIL LAW	-0.036
	(0.34)		(-0.89)		(-1.55)
FSH	0.002	SSH	-0.003	TSH	-0.012
	(0.34)		(-0.48)		(-1.08)
FFSH × CIVIL LAW	-0.001	SSH × CIVIL LAW	-0.001	TSH × CIVIL LAW	0.001
	(-0.82)		(-0.48)		(0.48)
	Model 1B		Model 2B		Model 3B
LAW AND ORDER	0.006	LAW AND ORDER	0.096	LAW AND ORDER	0.121*
	(0.07)		(1.53)		(1.99)
FSH	-0.009	SSH	-0.003	TSH	0.011
	(-0.68)		(-0.10)		(0.23)
FFSH × LAW AND ORDER	0.002	SSH × LAW AND ORDER	0.001	TSH × LAW AND ORDER	-0.007
	(1.02)		(0.01)		(-0.69)
	Model 1C		Model 2C		Model 3C
DISCLOSURE INDEX	0.022	DISCLOSURE INDEX	-0.027	DISCLOSURE INDEX	-0.026
	(0.44)		(-0.88)		(-1.20)
FSH	0.003	SSH	-0.031**	TSH	-0.057***
	(0.44)		(-2.00)		(-2.70)
FFSH × DISCLOSURE INDEX	-0.001	SSH × DISCLOSURE INDEX	0.006*	TSH × DISCLOSURE INDEX	0.010***
	(-0.01)		(1.75)		(2.61)
Annual effects	Yes	Annual effects	Yes	Annual effects	Yes
Control variables	Yes	Control variables	Yes	Control variables	Yes
N observations	2,218	N observations	2,218	N observations	2,218
N firms	389	N firms	389	N firms	389

Table X (continued): Country legal origin, investor protection and the effect of ownership on firm performance

Panel B: The effect of number of large shareholders, ownership concentration and Herfindahl-Hirschamn ownership index					
Variables		**Variables**		**Variables**	
	Model 4A		Model 5A		Model 6A
CIVIL LAW	0.003	CIVIL LAW	-0.040	CIVIL LAW	-0.026*
	(0.10)		(-1.06)		(-1.86)
NLSH	-0.034	OWNCON	-0.002	HHI	0.122
	(-1.04)		(-0.61)		(1.21)
NLSH × CIVIL LAW	-0.006	OWNCON × CIVIL LAW	0.001	HHI × CIVIL LAW	0.003
	(-0.66)		(0.16)		(0.10)
	Model 4B		Model 5B		Model 6B
LAW AND ORDER	0.243*	LAW AND ORDER	0.064	LAW AND ORDER	0.022
	(1.68)		(0.55)		(0.41)
NLSH	0.294	OWNCON	-0.001	HHI	-1.169
	(1.14)		(-0.12)		(-1.40)
NLSH × LAW AND ORDER	-0.060	OWNCON × LAW AND ORDER	0.001	HHI × LAW AND ORDER	0.255
	(-1.21)		(0.15)		(1.59)
	Model 4C		Model 5C		Model 5D
DISCLOSURE INDEX	-0.037	DISCLOSURE INDEX	-0.018	DISCLOSURE INDEX	0.056*
	(-1.29)		(-0.40)		(1.73)
NLSH	-0.094*	OWNCON	-0.002	HHI	0.401
	(-1.66)		(-0.53)		(1.12)
NLSH × DISCLOSURE INDEX	0.020**	OWNCON × DISCLOSURE INDEX	0.001	HHI × DISCLOSURE INDEX	-0.063
	(1.97)		(0.78)		(-0.90)
Annual effects	Yes	Annual effects	Yes	Annual effects	Yes
Control variables	Yes	Control variables	Yes	Control variables	Yes
N observations	2,218	N observations	2,218	N observations	2,218
N firms	389	N firms	389	N firms	389

Table XI: Government quality and the effect of ownership on firm performance

Models are estimated using the Generalize Method of Moments (GMM). Values are unstandardized coefficients, with z values in parentheses. The dependent variable is AVALUE and denotes firms' industry-adjusted market value, GOVERNMENT STABILITY captures the government's ability to carry out its declared program(s) and its ability to stay in office by assessing government unity, legislative strength, and popular support; CONTROL OF CORRUPTION captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests; INVESTMENT PROFILE captures the factors affecting the risk of investment by assessing contract viability/expropriation, profits repatriation, and payment delays; FSH, SSH, and TSH denote the voting rights of the largest shareholder, the second-largest shareholder, and the third-largest shareholder, respectively; NLSH denotes the number of significant shareholders; OWNCON denotes the sum of the voting rights of all significant owners; HHI denotes the normalized Herfindahl-Hirschman Index. Models are estimated with constant; however, the constant is not reported in the table. Each institutional variable is considered individually. Models are estimated with the constant, year-dummy variables, and control variables (AGE (ln); ASSETS (ln); LEV) but there are not reported in the table. 18 models are summarized in the table. The Wald test of the joint significance of the reported coefficients of the explanatory variables, asymptotically distributed as χ^2 under the null hypothesis of no relationship for all explanatory variables is significant at 0.01 for all models. The second order serial correlation test using residuals in first differences, asymptotically distributed as $N(0,1)$ under the null hypothesis of no serial correlation is not significant for all models. The Hansen test of over-identifying restrictions, asymptotically distributed as under χ^2 the null hypothesis of no correlation between the instruments and the error term is not significant for all models. * $p < 0.10$; **$p < 0.05$; *** $p < 0.01$

Panel A: The effect of first, second or third largest shareholder

Variables		Variables		Variables	
	Model 1A		Model 2A		Model 3A
GOVERNMENT STABILITY	-0.071***	GOVERNMENT STABILITY	-2.79***	GOVERNMENT STABILITY	-0.033**
	(-2.85)		(-2.79)		(-2.22)
FSH	-0.004	SSH	-0.018	TSH	-0.005
	(-0.54)		(-1.38)		(-0.33)
FFSH × GOVERNMENT STABILITY	0.001	SSH × GOVERNMENT STABILITY	0.002	TSH × GOVERNMENT STABILITY	-0.001
	(1.16)		(1.28)		(-0.44)
	Model 1B		Model 2B		Model 3B
CONTROL OF CORRUPTION	-0.192	CONTROL OF CORRUPTION	-0.147	CONTROL OF CORRUPTION	-0.221**
	(-1.05)		(-1.28)		(2.46)
FSH	0.001	SSH	-0.003	TSH	-0.030**
	(0.16)		(-0.76)		(-2.42)
FFSH × CONTROL OF CORRUPTION	0.005	SSH × CONTROL OF CORRUPTION	0.008	TSH × CONTROL OF CORRUPTION	0.033**
	(0.98)		(0.78)		(2.09)
	Model 1C		Model 2C		Model 3C
INVESTMENT PROFILE	0.002	INVESTMENT PROFILE	0.005	INVESTMENT PROFILE	0.006
	(0.04)		(0.30)		(0.29)
FSH	-0.013	SSH	-0.099***	TSH	-0.104***
	(-0.91)		(-2.94)		(-3.06)
FFSH × INVESTMENT PROFILE	0.001	SSH × INVESTMENT PROFILE	0.009***	TSH × INVESTMENT PROFILE	0.009***
	(1.16)		(2.84)		(2.83)
Annual effects	Yes	Annual effects	Yes	Annual effects	Yes
Control variables	Yes	Control variables	Yes	Control variables	Yes
N observations	2,218	N observations	2,218	N observations	2,218
N firms	389	N firms	389	N firms	389

Table XI (continued): Government quality and the effect of ownership on firm performance

Panel B: The effect of number of large shareholders, ownership concentration and Herfindahl-Hirschamn ownership index

Variables		Variables		Variables	
	Model 4A		**Model 5A**		**Model 6A**
GOVERNMENT STABILITY	-0.036	GOVERNMENT STABILITY	-0.082***	GOVERNMENT STABILITY	-0.046***
	(-1.60)		(-2.76)		(-3.42)
NLSH	-0.034	OWNCON	-0.007	HHI	0.045
	(-0.52)		(-1.10)		(0.17)
NLSH × GOVERNMENT STABILITY	-0.001	OWNCON × GOVERNMENT STABILITY	0.001	HHI × GOVERNMENT STABILITY	0.009
	(-0.04)		(1.58)		(0.29)
	Model 4B		**Model 5B**		**Model 6B**
CONTROL OF CORRUPTION	0.001	CONTROL OF CORRUPTION	-0.186	CONTROL OF CORRUPTION	-0.046
	(0.01)		(-0.86)		(-0.50)
NLSH	-0.026	OWNCON	0.001	HHI	0.143
	(-0.76)		(0.15)		(1.44)
NLSH × CONTROL OF CORRUPTION	-0.035	OWNCON × CONTROL OF CORRUPTION	0.003	HHI × CONTROL OF CORRUPTION	-0.088
	(-0.57)		(0.80)		(-0.44)
	Model 4C		**Model 5C**		**Model 6C**
INVESTMENT PROFILE	-0.016	INVESTMENT PROFILE	-0.032	INVESTMENT PROFILE	0.066**
	(-0.48)		(-0.61)		(2.39)
NLSH	-0.282**	OWNCON	-0.016*	HHI	0.701
	(-2.29)		(-1.72)		(1.09)
NLSH × INVESTMENT PROFILE	0.026**	OWNCON × INVESTMENT PROFILE	0.002*	HHI × INVESTMENT PROFILE	-0.058
	(2.24)		(1.70)		(-0.88)
Annual effects	Yes	Annual effects	Yes	Annual effects	Yes
Control variables	Yes	Control variables	Yes	Control variables	Yes
N observations	2,218	N observations	2,218	N observations	2,218
N firms	389	N firms	389	N firms	389

Figure 1: Almarai Company SJSC onwership structure (2015)