



Ownership concentration, managerial ownership, and firm performance in Saudi listed firms

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Abstract

This study aims to investigate the impact of ownership concentration and managerial ownership on firm performance in Saudi listed firms. The relationship between ownership concentration, managerial ownership, and firm performance is examined using a Fixed effects (FE) model and a Two-Stage least squares (2SLS) regression model for 70 Saudi listed firms over the period 2016–2021 to enable hypothesis testing, thereby addressing any autocorrelation, heteroscedasticity, and endogeneity issues. Ownership structure is captured in terms of ownership concentration and managerial ownership, and firm performance is gauged in terms of accounting-based performance (ROA and ROE) and market-based performance (TQ and MBR). The results show that the degree of both ownership concentration and managerial ownership positively affect firm performance, thus supporting agency theory and alignment effects arguments. Further, sales growth, audit firm size, and firm age positively affect firm performance while firm leverage, liquidity, and size have a negative effect. The findings have significant implications for Saudi regulators in their efforts to improve the efficiency of rapidly developing domestic capital markets, as well as to enhance investor protection and maintain economic confidence. The analysis may also contribute to the call for a corporate governance code to protect minority shareholders. The study has implications for investors, academics, and policymakers, as the findings indicate that ownership variables such as ownership concentration and managerial ownership have a key impact on firm operational and market performance. Investors may consider the findings to better understand the ownership-performance dynamic of Saudi listed firms when building their investment portfolios.

Keywords Saudi Arabia · Ownership concentration · Managerial ownership · Performance · Agency theory

Introduction

Over recent decades, the relationship between firm performance and ownership structure has become an increasing focus of academic research. One particular aspect of importance is whether composition of the shareholder base and the relative power of shareholders influence firm performance. As a core attribute of ownership structure, ownership concentration captures the percentage of shares held by an owner in relation to the firm's total shareholding. The ownership structure-firm performance dynamic will determine the effectiveness of a firm's corporate governance

mechanism. Grossman and Hart (1980) argue that when a firm's ownership structure is too diffused, shareholders will be less inclined to actively monitor the decisions of management since the benefits gained from so doing will be less than the management control costs, a situation which may impact negatively on firm performance. In contrast, Shleifer and Vishny (1986) argue that in the presence of high ownership concentration, shareholders are more able to control management activities, thereby minimizing management inefficiencies and enhancing corporate performance. However, one drawback identified by Jensen and Meckling (1976) is that higher concentration can lead to major shareholders prioritizing their own interests, resulting in agency problems between shareholders and managers. Thus, a firm's shareholders must bear agency costs in order to minimize agency problems.

A second characteristic of ownership structure is managerial ownership, whereby managers taking a significant shareholding in the firm can avoid conflicts of interest between

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them and the owners (shareholders), at the same time potentially enhancing firm performance. Thus, significant share ownership by managers can align their interests with those of external shareholders, embedding strong incentives for the former to undertake performance-maximizing behaviour (referred to as *alignment effects*). In contrast, Demsetz (1983) argue that managers maintaining a large shareholder stake may be more concerned with their own interests than with external shareholder interests, and the firm's performance will suffer as a result (referred to as *entrenchment effects*).

The relationship between firm performance and ownership structure has been studied in previous research. However, the literature provides conflicting results in terms of how ownership structure characteristics are related to firm performance, though the majority of studies concentrate on developed country firms, creating a literature gap for the developing country context. In most studies on ownership structure, the focus has been on the potential conflicts of interest between management and owners in developed countries. Concentrated ownership, however, is common in emerging economies, resulting in friction between minority and majority shareholders that can negatively affect corporate performance. Clearly, developing country corporate sectors will be characterized by a variety of conditions that are different from counterparts in developed countries, the former suffering from weaker legal protection for firm stakeholders, for example, and thus further academic study is required. Examining concentration and managerial ownership offers an avenue for exploring such conflicts and understanding better the relationship between ownership structure and firm performance in developing countries. The purpose of this paper is to help fill this gap in the literature and thus better understand the nature of ownership concentration and managerial ownership and their effects on firm performance for Saudi listed firms over the period 2016 to 2021. This study may help Saudi regulators to appreciate more clearly how corporate performance is related to ownership concentration and managerial ownership, hopefully making some contribution to improving the business environment and promoting firm performance. Such regulators may wish to strengthen the corporate governance code in order to enhance the efficiency of the rapidly developing capital markets in Saudi Arabia, while improving the protection of investors and maintaining economic confidence. In the corporate context, the findings may also prove useful to Saudi firms when determining the best ownership structure to promote corporate performance. For investors, understanding the ownership structure-firm performance dynamic should help them to better identify those firms which will optimize their investment portfolios.

The study contributes to the extant literature in a number of ways. First, it extends the extant literature on firm

performance and ownership structure by examining the relationship between performance and ownership concentration and managerial ownership in the context of Saudi listed firms. Secondly, given the setting of an emerging and developing economy, Saudi Arabia provides a context that differs from that of a developed economy in terms of institutional and legal systems, and thus should allow comparison of empirical results with the latter. Finally, while the majority of previous research focuses on either accounting-based (Lauterbach and Vaninsky 1999; Rouf and Hossain 2018) or market-based (Demsetz and Villalonga 2001; Kapopoulos and Lazaretou 2007) firm performance when analysing the impact of either ownership concentration or managerial ownership, this study is more comprehensive in examining both measures of firm performance. The analysis includes both the accounting-based performance (ROA and ROE) and market-based performance (Tobin's Q and MBR).

The rest of the paper is organized as follows. Section "Corporate governance practices in Saudi Arabia" gives some context on the corporate governance environment and practices of Saudi firms. Section "Results and discussion" provides a review of the extant literature and grounds the study hypotheses. Section 4 explains the empirical methodology, followed by a discussion of the research results in Sect. 5. Finally, Sect. 6 presents the study conclusion, including the contributions, implications, and limitations of the research along with opportunities for future work.

Corporate governance practices in Saudi Arabia

In Saudi Arabia, the Corporate Governance Regulations (2017) were developed to provide general guidance to Saudi Stock Exchange firms and their shareholders regarding governance rules, regulations, and practice. The Tadawul, the largest stock market in the Middle East, is supervised by the Capital Market Authority (CMA), and as of December 2020 it listed 203 publicly traded firms. The Saudi corporate setting is characterized by concentrated ownership structures (mainly government and family), the prohibition of direct foreign equity investments, and low institutional ownership levels, resulting in insufficient shareholder activism and a weak capacity to enforce corporate rules (Al-Razee and Karbhari 2004; Piesse et al. 2012). A large proportion of Saudi listed firms are typified by a high level of ownership concentration, institutional ownership, governmental ownership, and family ownership, the latter including the Saudi royal family. From June 2015, foreign investors were able to invest in Tadawul equity markets (Cabural 2015), though at first their access was limited (Atwill 2014). Concentrated ownership can weaken the labour markets for capital, corporate control, products, professional services, and top management (Gillan 2006; Haniffa and Hudaib 2006), and this can negatively impact the willingness of corporations



to disclose voluntary information and might also hit firm performance (Al-Bassam et al. 2018).

Following the 2006 stock market crash in Saudi Arabia when the general index fell by 60% resulting from, amongst other factors, poor corporate governance, the CMA issued rules and regulations in an attempt to prevent future systemic events, resulting in a governance code that was voluntary until the start of 2009 and then mandatory from 2010 (Al-Abbas 2009). The role of the CMA was to govern the stock market, supervise the implementation of Corporate Governance Regulations, and monitor compliance with the specific requirements for Saudi listed firms in accordance with OECD standards (OECD 2004). The Code of Corporate Governance was first published in 2017 and aimed to harmonize Saudi regulations with international standards and OECD principles. The Code tackled issues of transparency and disclosure, the rights of shareholders, General Assembly meetings (annual general meetings), and the modus operandi of corporate boards of directors. Furthermore, from 2017 Saudi Arabia implemented IFRSs, requiring listed firms to engage in reporting with national standards that are wholly compliant (IASPlus 2020), thereby improving the quality of financial disclosure and transparency, increasing the comparability of financial statements, and potentially resulting in a lower cost of capital for adopting firms.

Since the new Code of Corporate Governance and IFRS adoption are likely to have an impact on corporate performance, it is important for stakeholders to better identify governance and other factors that have the greatest impact on such performance. The Code included accounting reforms to support new securities exchange laws as well as a focus on improving corporate governance practices. Both academic researchers and firm stakeholders should benefit from understanding more clearly how a change in ownership structure factors may affect firm performance in terms of profitability, growth and shareholder returns. Thus, this study aims to determine the effect of the ownership structure factors of ownership concentration and managerial ownership on both the operational and market performance of Saudi listed firms.

Literature review and hypothesis development

Several prior studies have focused on the empirical relationship between mechanisms of corporate governance and corporate performance. However, the extant research, whether conducted in relation to developed or developing nations, has yet to examine how ownership structure, in terms of ownership concentration and managerial ownership, is related to performance. The literature has revealed that agency conflicts may be alleviated and thus firm performance improved with greater ownership concentration (Shleifer and Vishny 1986; Zeckhauser and Pound 1990; Mak and Kusnadi 2005;

Haniffa and Hudaib 2006; Cho and Kim 2007; Al-Smadi 2013; Abdallah and Ismail 2017; Aktan et al. 2018; Wang et al. 2019; Boshnak 2021; and Shahrier et al. 2020) and managerial ownership (Jensen and Meckling 1976; Agrawal and Knoeber 1996; Morck et al. 1988; Balatbat et al. 2004; Elsayed 2007; Bhagat and Bolton 2008; Kumar and Singh 2013; Arora et al. 2016; Al-Malkawi and Pillai 2018; Talab et al. 2018; Alabdullah 2018; Al-Janadi et al. 2021; Din et al. 2021; and Ogabo et al. 2021).

In a Saudi Arabian setting, less consideration has been paid to the potential relationship between ownership concentration, managerial ownership, and firm performance (Soliman 2013; Amin and Hamdan 2018). Thus, this study investigates the impact of ownership concentration and managerial ownership on firm performance in Saudi listed firms. It improves upon the existing studies of Soliman (2013) and Amin and Hamdan (2018) in a number of ways. First, it adds to the corpus of emerging market research on ownership structure and firm performance by providing recent data for the period 2016–2021. Second, it examines the impact of such ownership structure factors on corporate performance more deeply by focusing on both operational and market performance as dependent variables, while also allowing an examination of the impact of new firm-specific factors. Finally, the study provides new evidence and debate on the importance and efficiency of ownership concentration and managerial ownership as drivers of Saudi firm performance.

Ownership concentration and firm performance

Ownership concentration is a fundamental characteristic of corporate governance. The literature on ownership concentration is mixed, supporting either a positive or negative relationship, though there appears greater support for the former from an agency theory perspective. According to agency theory, greater ownership concentration can reduce the agency problem that occurs between firm managers and owners and directly persuades management to safeguard shareholders' interests (Shleifer and Vishny 1986), thereby potentially decreasing the agency costs inherent in conflicts of interest between the two groups (Eisenhardt 1989). Further, Zeckhauser and Pound (1990) argue that a high concentration of ownership, particularly where there are fewer block holders, boosts their ability to more comprehensively supervise management actions in order to maximize performance.

According to Resource Dependence Theory, owners (shareholders) of a firm with a high concentration ratio can employ their connections to secure requisite resources (Carney and Gedajlovic 2001), and therefore both control and support management (Pfeffer and Salancik 2003). In developing countries with insufficient legal systems, investors may feel compelled to participate in management control (Gillan 2006). Thus, owners may take advantage of



ownership that is concentrated in order to exert pressure on the firm's management by directly participating in governance and having direct access to strategy development (Claessens et al. 2006).

Underlining a negative association between firm performance and concentrated ownership, La Porta et al. (1999) argue that concentrated (block) owners seek to control the firm's resources (that is, its assets and its profits) at the expense of the less powerful minority shareholders, potentially resulting in the latter in addition to the firm itself suffering wealth expropriation.

The balance of empirical evidence appears to support a positive relationship between firm performance and the degree of ownership concentration (Al-Smadi 2013; Soliman 2013; Abdallah and Ismail 2017; Aktan et al. 2018; Wang et al. 2019; Boshnak 2021; Shahrier et al. 2020). However, other studies report a negative relationship (Abdelkarim and Alawneh 2009; Al-Saidi and Al-Shammari 2015; Arayssi and Jizi 2018; Hamdan 2018). From an agency theory perspective, a positive relationship is anticipated, and the following hypothesis is proposed:

H1 There is a positive relationship between firm performance and the degree of ownership concentration.

Managerial ownership and firm performance

Managerial ownership occurs when the board of directors or executive managers are also significant shareholders, and as insider shareholders will be better motivated to improve corporate performance. Jensen and Meckling (1976) make the agency theory argument that such insider shareholders will decrease agency costs by having a common interest with the outside shareholders. The authors argue that when firm management owns only a small fraction of the firm's shares, agency costs will increase as they will focus on maximizing their private benefits rather than promoting shareholder value. However, as the proportion of managerial shareholding is increased, agency problems may be reduced and manager-shareholder interests become more aligned, thereby improving firm performance (Vafeas and Theodorou 1998; Kumar and Singh 2013; Arora et al. 2016).

In contrast, some authors argue that managerial ownership is negatively related to firm performance, obstructing the efficiency of the board of directors when exercising control within the firm, especially in the case of countries with weak legal protection such as those in the Middle East (Morck et al. 1988; Denis and Denis 1994). Moreover, increasing managerial ownership may lead to such shareholders expropriating minority shareholder wealth (Fama and Jensen 1983).

In terms of empirical evidence, the extant literature on the managerial ownership-firm performance relationship is

mixed. Some research finds that higher managerial ownership reduces agency costs and gives rise to improved firm performance, thereby producing a positive relationship (Agrawal and Knoeber 1996; Morck et al. 1988; Balatbat et al. 2004; Elsayed 2007; Bhagat and Bolton 2008; Al-Malkawi and Pillai 2018; Talab et al. 2018; Alabdullah 2018; Al-Janadi 2021; Din et al. 2021; Ogabo et al. 2021). However, other empirical research reports a negative relationship consistent with the entrenchment argument that managers maintaining a large ownership stake may be more focused on their own interests than the interests of external shareholders, and as a result this leads to decreasing firm performance (Slovin and Sushka 1993; Boyle et al. 1998; Basuony et al., 2014; Al-Matari and Al-Arussi, 2016; Shan et al., 2019). A positive relationship is expected from an agency theory perspective, and thus the following hypothesis is proposed:

H2 There is a positive relationship between firm performance and the degree of managerial ownership.

Research methodology

This paper presents an examination of the impact of two key aspects of ownership structure, ownership concentration and managerial ownership, on the performance of Saudi-listed firms using both a descriptive analysis and a Fixed Effects (FE) regression analysis, consistent with approaches employed in the existing literature (Al-Saidi and Al-Shammari 2015; Alabdullah 2018; Shan et al., 2019; Wang et al. 2019; Al-Janadi et al., 2021). The FE regression approach is employed to correct for both heteroscedasticity and serial correlation (Hausman 1978).

Sample collection

The study sample consists of the leading 70 Saudi non-financial listed firms in terms of the market capitalization index over the period 2016–2021 and across industries, giving 420 firm-year observations for each model variable. Firms in the banking and insurance sector and real estate investment trusts (REITs) are omitted from the sample because of their adherence to specific regulations and the presence of characteristics that distinguish them from other sectors. The sample data is collected from corporate websites and company annual reports and represents an average of 51% of Tadawul non-financial firms, as shown in Table 1.

Model variable measurement

Two measures of corporate performance form the dependent variables in the empirical models of this study. Accounting-based performance is gauged using return on assets (ROA) and return on equity (ROE) ratios, while market-based



Table 1 The sample selection process

	2016	2017	2018	2019	2020	2021	Total
Initial sample	176	188	200	204	207	227	1,202
Less: Financial firms	(12)	(12)	(12)	(12)	(12)	(12)	(72)
Less: Insurance firms	(33)	(33)	(33)	(33)	(33)	(33)	(198)
Less: Real estate investment firms	(17)	(17)	(17)	(17)	(17)	(17)	(102)
Final sample	114	126	138	142	145	165	830
Number of selected firms	70	70	70	70	70	70	420
Selected firms as percentage of total firms	61%	55%	51%	49%	48%	42%	51%

performance is captured using Tobin's Q (TQ) and the market to book ratio (MBR), consistent with measures employed in the extant literature (Al-Saidi and Al-Shammari 2015; Yasser and Al Mamun, 2015; Mishra and Kapil 2017; Wang et al. 2019; Shahrier et al. 2020). Since there is no theoretical consensus in the existing literature on the best measure(s) to gauge corporate performance, two measures are selected, each with their relative merits. (Haniffa and Hudaib 2006). ROA and ROE are simple backward-looking measures calculated on the basis of accounting rules and gauge the firm's accounting profitability, or from another perspective its productivity (Kapopoulos and Lazaretou 2007). In contrast, Tobin's Q and MBR are forward-looking and capture a company's intrinsic (market) value compared to its accounting or book value and are used to assess a company's future growth prospects (Kapopoulos and Lazaretou 2007). Employing both measures in this study should therefore capture the dynamics of performance generation from both historical and prospective views. The hypothesized model independent variables are ownership concentration (OWNC)

and managerial ownership (MOWN). The concentration of ownership is the percentage of shares held by top shareholders such as government, institutions and families. Six further firm attributes are incorporated as control variables: firm size (SIZE), sales revenue growth (GROWTH), firm leverage (LEV), firm liquidity (LIQ), audit firm size (AUDIT), and firm age or length of establishment (AGE), consistent with extant empirical studies (Al-Saidi and Al-Shammari 2015; Yasser and Al Mamun, 2015; Mishra and Kapil 2017; Alabdullah 2018; Wang et al. 2019; Shahrier et al. 2020). The variable labels along with their definitions are detailed in Table 2.

The study models

To examine the relation between firm performance and ownership concentration and managerial ownership, and thereby test the study hypotheses, four econometric models are estimated for each of the two performance measures as detailed in Eqs. 1–8.

Table 2 Variable definitions, labels, and measurement

Variable	Label	Definition
<i>Dependent variables</i>		
Return on assets	ROA	Net income to total assets ratio
Return on equity	ROE	Net income to total equity ratio
Tobin's Q	TQ	(Market value of equity + book value of short-term liabilities) to book value of total assets
Market to book ratio	MBR	Market capitalisation of firm on last trading day of year divided by book value of equity
<i>Hypothesized independent variables</i>		
Ownership concentration	OWNC	Percentage of shares held by the largest three shareholders to the total number of shares
Managerial ownership	MOWN	Percentage of shares held by senior managers (including the CEO and/or inside directors) to the total number of shares
<i>Control variables</i>		
Firm size	SIZE	Natural logarithm of the firm's total assets
Sales revenue growth	GROWTH	(Total sales revenue of the current year minus total sales in the previous year) divided by total sales in the current year
Firm leverage	LEV	Total debt to total assets ratio
Firm liquidity	LIQ	Current assets to current liabilities ratio
Audit firm size	AUDIT	Dummy variable that equals one if firm is audited by a "big four" auditing firm, and zero otherwise
Firm Age	AGE	Number of years since incorporation



Accounting-based performance models (I and II). Model I:

$$\begin{aligned} ROA_{it} = & \beta_0 + \beta_1 OWNC_{it} + \beta_2 MOWN_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} \\ & + \beta_5 LEV_{it} + \beta_6 LIQ_{it} + \beta_7 AUDIT_{it} \\ & + \beta_8 AGE_{it} + \beta_9 COVID - 19_{it} \varepsilon_{it} \end{aligned} \quad (1)$$

Model II:

$$\begin{aligned} ROE_{it} = & \beta_0 + \beta_1 OWNC_{it} + \beta_2 MOWN_{it} + \beta_3 SIZE_{it} \\ & + \beta_4 GROWTH_{it} + \beta_5 LEV_{it} + \beta_6 LIQ_{it} \\ & + \beta_7 AUDIT_{it} + \beta_8 AGE_{it} + \beta_9 COVID - 19_{it} \varepsilon_{it} \end{aligned} \quad (2)$$

Market-based performance models (III and IV).

Model III:

$$\begin{aligned} TQ_{it} = & \beta_0 + \beta_1 OWNC_{it} + \beta_2 MOWN_{it} + \beta_3 SIZE_{it} \\ & + \beta_4 GROWTH_{it} + \beta_5 LEV_{it} + \beta_6 LIQ_{it} \\ & + \beta_7 AUDIT_{it} + \beta_8 AGE_{it} + \beta_9 COVID - 19_{it} \varepsilon_{it} \end{aligned} \quad (3)$$

Model IV:

$$\begin{aligned} MBR_{it} = & \beta_0 + \beta_1 OWNC_{it} + \beta_2 MOWN_{it} + \beta_3 SIZE_{it} \\ & + \beta_4 GROWTH_{it} + \beta_5 LEV_{it} + \beta_6 LIQ_{it} + \beta_7 AUDIT_{it} \\ & + \beta_8 AGE_{it} + \beta_9 COVID - 19_{it} \varepsilon_{it} \end{aligned} \quad (4)$$

Then, by using two-stage least squares (2SLS) regression, the following Eqs. 5–8 are applied to control endogeneity issues:

Accounting-based performance models (V– VI).

Model V:

$$\begin{aligned} ROA_{it} = & \beta_0 + \beta_1 OWNC_{it} + \beta_2 MOWN_{it} + \beta_3 SIZE_{it} \\ & + \beta_4 GROWTH_{it} + \beta_5 LEV_{it} + \beta_6 LIQ_{it} + \beta_7 AUDIT_{it} \\ & + \beta_8 AGE_{it} + \beta_9 COVID - 19_{it} \varepsilon_{it} \end{aligned} \quad (5)$$

Model VI:

$$\begin{aligned} ROE_{it} = & \beta_0 + \beta_1 OWNC_{it} + \beta_2 MOWN_{it} + \beta_3 SIZE_{it} \\ & + \beta_4 GROWTH_{it} + \beta_5 LEV_{it} + \beta_6 LIQ_{it} + \beta_7 AUDIT_{it} \\ & + \beta_8 AGE_{it} + \beta_9 COVID - 19_{it} \varepsilon_{it} \end{aligned} \quad (6)$$

Market-based performance models (VII and VIII).

Model VII:

$$\begin{aligned} TQ_{it} = & \beta_0 + \beta_1 OWNC_{it} + \beta_2 MOWN_{it} + \beta_3 SIZE_{it} \\ & + \beta_4 GROWTH_{it} + \beta_5 LEV_{it} + \beta_6 LIQ_{it} + \beta_7 AUDIT_{it} \\ & + \beta_8 AGE_{it} + \beta_9 COVID - 19_{it} \varepsilon_{it} \end{aligned} \quad (7)$$

Model VIII:

$$\begin{aligned} MBR_{it} = & \beta_0 + \beta_1 OWNC_{it} + \beta_2 MOWN_{it} + \beta_3 SIZE_{it} \\ & + \beta_4 GROWTH_{it} + \beta_5 LEV_{it} + \beta_6 LIQ_{it} + \beta_7 AUDIT_{it} \\ & + \beta_8 AGE_{it} + \beta_9 COVID - 19_{it} \varepsilon_{it} \end{aligned} \quad (8)$$

where: i = firm identifier; t = year identifier; ROA = return on assets; ROE = return on equity proxy; TQ = Tobin's; MBR = market to book ratio; OWNC = ownership concentration; MOWN = managerial ownership; SIZE = firm size; GROWTH = sales growth; LEV = firm leverage; LIQ = firm liquidity; AUDIT = audit firm size; AGE = firm age; COVID - 19 = Covid - 19 year dummy; ε = error term.

Results and discussion

Descriptive statistics analysis

The model variable descriptive statistics are given in Table 3. Mean return on assets (ROA) is 4.9% and ranges from -16.5% to 30.9%, mean return on equity (ROE) is around 7% with a range from -246% to 60%, mean Tobin's Q (TQ) is around 1.53 and ranges from 0.33 to 7.34 and the mean of market to book ratio (MBR) is 230% and ranges from 0% to 1,350%. Thus, Saudi listed firms are in general utilizing their assets well to produce healthy profits, and also creating value for shareholders well in excess of accounting values. Regarding firm ownership, the three largest investors own 36.5% of outstanding shares (OWNC), with the proportion of ownership ranging from zero to 98.0%, while managerial investors (MOWN) own around 3.7% of shares, with the proportion ranging from zero to 52.5%. Evidently, Saudi list firms are characterized by significantly concentrated ownership and a relatively high proportion of managerial ownership compared to observations in existing studies. For example, Amin and Hamdan (2018) find that average ownership concentration and managerial ownership were 25.7% and 1.18%, respectively, in Saudi Arabia, while Ogabo et al. (2021) report that the average ownership concentration and managerial ownership were 4% and 1.66%, respectively, for UK firms. Firm size expressed in natural log form (SIZE) is 6.88 and ranges from around 6.10–9.28. Mean sales revenue growth (GROWTH) is -1.60%, and ranges from -820% to 245%, thereby evidencing some sales revenue contraction over the study period. Mean firm leverage (LEV) is 42.9% and ranges from 2.2% to 100% and thus firms are on average fairly highly levered, while mean firm liquidity (LIQ) is 1.585 and ranges from 0.11 to 12.89. The audit firm size (AUDIT) dummy variable shows that 66% of firms on average have engaged



Table 3 Descriptive statistics for the model variables

Variable	Symbol	Mean	Min	Max	Standard deviation
Return on assets	ROA	0.049	-0.165	0.309	0.073
Return on equity	ROE	0.072	-2.455	0.599	0.187
Tobin's Q	TQ	1.534	0.325	7.335	1.192
Market to book ratio	MBR	2.298	0.000	13.500	1.758
Ownership concentration	OWNC	0.365	0.000	0.980	0.252
Managerial ownership	MOWN	0.037	0.000	0.525	0.090
Firm size (<i>Ln</i>)	SIZE	6.880	6.097	9.282	0.639
Sales growth	GROWTH	-0.016	-8.198	2.450	0.558
Firm leverage	LEV	0.429	0.022	1.000	0.215
Firm liquidity	LIQ	1.585	0.109	12.894	1.535
Audit firm size	AUDIT	0.666	0.000	1.000	0.472
Firm age	AGE	28.683	6.000	65.000	14.523
Firm age (<i>Ln</i>)	AGE	1.394	0.778	1.813	0.246

Big-4 audit firms. Sample firms have been in operation for an average of 29 years, with their ages ranging from six to 65 years, and thus such firms are relatively young compared to their western counterparts.

Correlation analysis

Table 4 shows a Pearson correlation matrix analysis of the model variables to ascertain potential issues with multicollinearity. The only very high correlations, as expected, are between the four-performance measure dependent variables which are anyhow included in separate regression models. Regarding the relation between the model dependent and independent variables, ROA is significantly negatively correlated with firm leverage (LEV) (-0.403) and significantly positively correlated with managerial ownership (MOWN) (0.201), firm liquidity (LIQ), and firm age (AGE) (0.140), all at the 1% level of significance. ROE is significantly negatively correlated with (LEV) (-0.243). Moreover, the table shows that Tobin's Q is significantly positively correlated with managerial ownership (MOWN) (0.302) and firm age (AGE) (0.242), and significantly negatively correlated with firms leverage (LEV) (-0.280), respectively, all at the 1% level of significance. MBR is significantly positively correlated with managerial ownership (MOWN) (0.311). Furthermore, ownership concentration (OWNC) is significantly positively correlated with firm size (SIZE) (0.403) and audit firm size (AUDIT) (0.283) while it is significantly negatively correlated with firm age (AGE) (-0.247), all at the 1% level of significance. Managerial ownership (MOWN) is significantly negatively correlated with firm size (SIZE) (-0.238) and audit firm size (AUDIT) (-0.161), and significantly

positively correlated with firm age (AGE), all at the 1% level of significance. Finally, there is some significant correlation between certain of the control variables.

Regression results

Hausman specification test

Before deciding on which would be the best regression approach between the fixed effects and the random effects model, the study performs the Hausman specification test. The null hypothesis tested in Table 5 shows that the better model to use is the Random Effects model. The result shows that the probability of the Chi-Square statistic, however, is far less than the 5 percent level of significance meaning that the study rejects the null hypothesis in favour of estimation of the fixed effects model.

Fixed effects regression results for the accounting-based performance measures (ROA and ROE)

In this study, the Hausman test is used to determine whether a fixed effects model or a random effects model is more appropriate. The test *p*-value is significant = 0.0000 < 0.05 and so the fixed effects regression model is employed to reduce the standard errors. A fixed effects model addresses potential endogeneity issues caused by omitted variables. Table 6 gives the results for models I and II to determine the relation between the accounting-based performance dependent variables, ROA and ROE, and ownership concentration and managerial ownership, together with the control



Table 4 Pearson correlation matrix for the model variables

	ROA	ROE	Tobin's Q	MBR	OWNC	MOWN	SIZE	GROWTH	LEV	LIQ	AUDIT	AGE
ROA	1											
ROE	0.748**	1										
Tobin's Q	0.728**	0.465**	1									
MBR	0.506**	0.375**	0.652**	1								
OWNC	0.074	-0.022	0.110*	0.093	1							
MOWN	0.201**	0.116*	0.302**	0.311**	0.112*	1						
SIZE	-0.083	-0.011	-0.127*	-0.069	0.403**	-0.238**	1					
GROWTH	0.115*	0.112*	0.030	0.041	-0.057	0.028	0.030	1				
LEV	-0.403**	-0.243**	-0.280**	0.072	0.132*	0.023	0.253**	0.086	1			
LIQ	0.156**	0.084	0.040	0.065	0.121*	-0.003	-0.083	-0.105*	-0.521**	1		
AUDIT	0.028	0.045	0.075	0.056	0.283**	-0.161**	0.340**	-0.077	0.046	0.038	1	
AGE	0.140**	0.079	0.242**	0.141**	-0.247**	0.188**	-0.193**	0.036	-0.129*	-0.217**	-0.109*	1

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Table 5 Hausman specification test

Test: H₀: difference in coefficients not systematic
 $\chi^2(7) = (b-B)'[(V_b - V_B)^{-1}](b-B) = 57.50$
 Prob > $\chi^2 = 0.0000$

variables, for Saudi listed firms. Model I has an adjusted R^2 of 0.258 and the F -test is significant ($F = 16.530, p < 0.001$), while model II has an adjusted R^2 of 0.110 and a significant F -test ($F = 4.900, p < 0.001$).

In terms of ownership structure variables, the ownership concentration variable, OWNC, has a coefficient which is positive and significant at the 5% level where it is included in model I, providing support hypothesis H1 and supporting an agency theory argument that greater ownership concentration can enhance corporate performance. Zeckhauser and Pound (1990) argue that a high degree of ownership concentration, particularly where there are fewer block holders, boosts the ability of owners to supervise management actions more comprehensively in order to maximize firm performance. Further, the result is aligned with extant empirical studies finding a positive relation (Al-Smadi 2013; Abdallah and Ismail 2017; Aktan et al. 2018; Wang et al. 2019; Boshnak 2021; Shahrier et al. 2020).

In addition, the coefficient of the managerial ownership variable, MOWN, is also positive and significant at the 1% level where it is included in models I and II. This result supports Hypothesis H2, and the agency and alignment effect arguments that managerial ownership enhances firm operational performance. As the degree of managerial shareholding increases, agency problems may be reduced and manager-shareholder interests become more aligned, thereby improving firm performance (Vafeas and Theodorou 1998; Kumar and Singh 2013; Arora et al. 2016). This finding accords with considerable extant empirical research (Agrawal and Knoeber 1996; Morck et al. 1988; Balatbat et al. 2004; Elsayed 2007; Bhagat and Bolton 2008; Al-Malkawi and Pillai 2018; Talab et al. 2018; Alabdullah 2018; Al-Janadi 2021; Din et al. 2021; Ogabo et al. 2021).

In relation to the model control variables, the table shows that ROA and ROE are significantly positively related to firm sales growth (GROWTH) at the 1% and 5% levels across the model I and the model II, respectively, whereas it is significantly negatively related to firm leverage (LEV) at the 1% level across the models. ROA is significantly positively associated with both firm age (AGE) in model I at the 5% level of significance. Further, ROE is significantly positively related to firm size (SIZE) in model II at the 10% level of significance. Firm accounting performance (ROA and ROE) is therefore enhanced in higher revenue growth Saudi firms and in more established firms, though those more highly



Table 6 Fixed effects regression results for the accounting-based performance measures (ROA and ROE)

Independent variables	Definition	Hyp	Exp. sign	Accounting-based performance measure					
				Model I (ROA)			Model II (ROE)		
				Coeff	t-statistic	P > t	Coeff	t-statistic	P > t
Constant	Model constant	-	+	0.019	0.430	0.665	-0.048	-0.380	0.705
<i>Ownership structure variables:</i>									
OWNC	Ownership concentration	H1	+	0.027	1.910	0.056**	-0.007	-0.180	0.855
MOWN	Managerial ownership	H2	+	0.155	4.160	0.000***	0.288	2.700	0.007***
<i>Control variables:</i>									
SIZE	Firm size	-	-	0.006	1.110	0.268	0.030	1.870	0.063*
GROWTH	Sales growth	-	-	0.017	3.360	0.000***	0.031	2.360	0.019**
LEV	Firm leverage	-	-	-0.156	-8.620	0.000***	-0.257	-4.950	0.000***
LIQ	Firm liquidity	-	-	-0.002	-0.870	0.385	-0.006	-0.860	0.389
AUDIT	Audit firm size	-	-	0.008	1.230	0.220	-0.009	-0.490	0.623
AGE	Firm age	-	-	0.027	1.900	0.058**	0.019	0.490	0.628
COVID-19	Covid-19 Year dummy	-	-	-0.004	0.790	0.428	0.004	0.250	0.807
YEAR	Year dummy	-	-	Included			Included		
INDUSTRY	Industry dummy	-	-	Included			Included		
Adjusted R ²				0.258			0.110		
F-statistic				16.530			4.900		
VIF				<2			<2		
Prob. (F)				0.000			0.000		
Number of observations				420			420		

***Significant at the 1% level, **Significant at the 5% level, *Significant at the 10% level

levered firms will suffer poorer performance due to debt servicing requirements.

Fixed effects regression results for the market-based performance measure (TQ and MBR)

Table 7 gives the results for models III and IV to determine the relation between the market-based performance, TQ and MBR, and the hypothesised ownership concentration and managerial ownership variables, along with the control variables, for Saudi listed firms. Model III has an adjusted R^2 of 0.241 and the F -test is significant ($F = 11.942$, $p < 0.001$), while model V has an adjusted R^2 of 0.203 and a significant F -test ($F = 14.520$, $p < 0.001$), and model IV has an adjusted R^2 of 0.130 and a significant F -test ($F = 6.870$, $p < 0.001$).

As previously observed for the ROA and ROE models, TQ is significantly positively related to ownership concentration, OWNC, at the 1% level only in model III and providing further support for hypothesis H1. The result again supports the agency theory argument that ownership concentration enhances firm market performance in the case of Saudi listed firms, a result consistent with considerable extant empirical evidence (Al-Smadi 2013; Abdallah and Ismail 2017; Aktan et al. 2018; Wang et al. 2019; Boshnak 2021; Shahrier et al. 2020).

Similarly, and in common with the earlier ROA and ROE models, TQ and MBR are significantly positively associated with managerial ownership, MOWN, at the 1% level in models III and IV where it is included, providing further support for hypothesis H2. Again, the agency argument that increasing managerial ownership has a positive impact on firm market performance is supported by the evidence, consistent with the considerable extant empirical research (Agrawal and Knoeber 1996; Morck et al. 1988; Balatbat et al. 2004; Elsayed 2007; Bhagat and Bolton 2008; Al-Malkawi and Pillai 2018; Talab et al. 2018; Alabdullah 2018; Al-Janadi 2021; Din et al. 2021; Ogabo et al. 2021).

In relation to the model control variables, the results again show that TQ and MBR are significantly positively related to audit firm size (AUDIT) at the 1% level and 5% level in models III and IV, respectively, and TQ is significantly positively associated with firm age (AGE) largely at the 1% level in model III only, while TQ is significantly negatively related to firm leverage (LEV) at the 1% level and firm liquidity (LIQ) at the 5% level in model III. Further, Tobin's Q is significantly negatively related to firm size (SIZE) at the 10% level of significance in models III. Firm market performance (TQ and MBR) is thus superior in more established firms with more prominent auditors, though it deteriorates in more highly levered firms and firms with excess liquidity.



Table 7 Fixed effects regression model results for the market-based performance measures (TQ and MBR)

Independent variables	Definition	Hyp	Exp. sign	Market-based performance measures					
				Model III (TQ)			Model IV (MBR)		
				Coeff	t-statistic	P > t	Coeff	t-statistic	P > t
Constant	Model constant	–	+	1.882	2.570	0.011**	2.203	1.870	0.062*
<i>Ownership structure variables:</i>									
OWNC	Ownership concentration	H1	+	0.848	3.590	0.000***	0.510	1.340	0.180
MOWN	Managerial ownership	H2	+	3.195	5.270	0.000***	5.664	5.810	0.000***
<i>Control variables:</i>									
SIZE	Firm size	–	–	–0.169	–1.810	0.071*	–0.212	–1.410	0.159
GROWTH	Sales growth	–	–	0.086	1.130	0.259	0.166	1.350	0.177
LEV	Firm leverage	–	–	–1.821	–6.160	0.000***	0.391	0.820	0.411
LIQ	Firm liquidity	–	–	–0.098	–2.380	0.018**	–0.018	–0.280	0.781
AUDIT	Audit firm size	–	–	0.332	2.890	0.004***	0.460	2.490	0.013**
AGE	Firm age	–	–	0.803	3.470	0.001***	0.564	1.520	0.130
COVID-19	Covid-19 Year dummy	–	–	–0.073	–0.730	0.467	–0.164	–1.020	0.310
YEAR	Year dummy	–	–	Included			Included		
INDUSTRY	Industry dummy	–	–	Included			Included		
Adjusted R ²				0.241			0.130		
F-statistic				14.520			6.870		
VIF				<2			<2		
Prob. (F)				0.000			0.000		
Number of observations				420			420		

***Significant at the 1% level, **Significant at the 5% level, *Significant at the 10% level

To summarize, Saudi listed firm performance, whether gauged in accounting terms (ROA and ROE) or market terms (TQ and MBR), increases with the degree of ownership concentration and the extent of managerial ownership. Corporations in the Middle East, and in particular in Saudi Arabia, enjoy a high degree of both ownership concentration and managerial ownership, and most are family-controlled firms. Given the clear positive impact these two ownership structure characteristics have on both accounting and market performance, this ‘ownership culture’ is clearly well suited to the corporate environment in the country. The results further underline the agency theory case and alignment effects arguments that greater ownership concentration increases stockholder power and greater managerial ownership promotes management alignment with stockholder objectives, hence improving firm performance.

Robustness test

The empirical literature in accounting and finance shows that panel regression models may suffer from endogeneity issues, producing regression estimates that are potentially biased and inconsistent, thereby compromising causality inference. The independent variables in a regression must be exogenous otherwise, the results may be spurious. It has

been suggested that ownership is endogenous in prior studies. Several studies have found that ownership and firm performance are endogenous variables (Demsetz and Villalonga 2001; Farooque et al. 2010; Shan et al., 2019). The variables should be tested for endogeneity so if some of them are endogenous, instruments can be used to proxy them. The two-stage least squares regression (2SLS) is an instrumental variable estimation and is used as a robustness test to address issues related to endogenous variables (Arora et al. 2016; Al-Malkawi and Pillai 2018; Talab et al. 2018; Alabdullah 2018; Al-Janadi et al., 2021; Din et al. 2021; Ogabo et al. 2021). Thus, to control for endogeneity and the confounding effects of ownership on firm performance.

The 2SLS results reported in Tables 8 are almost entirely consistent with those of the earlier FE regression models in Tables 6, except for firm age (AGE) control variable. AGE becomes insignificant across the respective model V. Moreover, the 2SLS results reported in Tables 9 are almost entirely consistent with those of the earlier FE regression models in Tables 7, except for the firm age (AGE) control variable. AGE remains positive and becomes significant at the 5% level across the respective model VIII. Thus, the result suggests that firm age had a significant positive impact on firm market performance (MBR). Thus, as the results of the robustness test are consistent with those of the earlier



regression analysis, the regression analysis results of this paper appear reliable. Further, the results remain qualitatively similar for the model control variables.

Conclusion

The aim of this study is to examine the impact of two ownership structure variables, ownership concentration and managerial ownership, on both accounting-based performance (ROA and ROE) and market-based performance (TQ and MBR) for a sample of 70 Saudi non-financial listed firms over the period 2016–2021. The study finds that there is a significant positive relationship between the extent of ownership concentration and both accounting-based and market-based performance measures. This supports the agency theory argument that ownership concentration can moderate the agency problems between the owners and management of the firm by directly persuading managers to safeguard shareholders' interests. A high level of ownership concentration increases the ability of larger shareholders to fully monitor the decisions of managers and thereby maximize performance. The study also finds that there is a significant positive association between the degree of managerial ownership and firm performance. This finding again provides

support for agency theory and alignment effect arguments that managerial ownership is an important tool for reducing agency issues and encouraging managers to improve firm performance (Kumar and Singh 2013; Arora et al. 2016). Further, Vafeas and Theodorou (1998) argue that when there is a high degree of managerial ownership, such managers will be better focused on maximizing firm performance, thereby aligning their interests completely with wider shareholders. In terms of the other model variables examined, sales growth, audit firm size, and firm age tend to positively impact firm performance, while leverage, liquidity, and firm size have a negative impact.

This study makes some useful contributions to the literature. It investigates the relationship between accounting-based and market-based measures of corporate performance and the ownership structure variables of ownership concentration and managerial ownership. The study is critical given the wealth of research on this relationship for developed countries, but the lack of research in the case of Saudi listed firms and developing country corporations more generally. The study is particularly interesting given the relatively high degree of both ownership concentration and managerial ownership in Saudi firms, coupled with a lack of investor legal protection and the absence of a code to protect minority shareholders.

Table 8 2SLS regression results for the accounting-based performance measures (ROA and ROE)

Independent variables	Definition	Hyp	Exp. sign	Accounting-based performance measure					
				Model V (ROA)			Model VI (ROE)		
				Coeff	t-statistic	P > t	Coeff	t-statistic	P > t
Constant	Model constant	–	+	0.027	0.620	0.536	–0.025	–0.200	0.842
<i>Ownership structure variables:</i>									
OWNC	Ownership concentration	H1	+	0.026	1.810	0.070*	–0.011	–0.270	0.786
MOWN	Managerial ownership	H2	+	0.158	4.250	0.000***	0.296	2.810	0.005***
<i>Control variables:</i>									
SIZE	Firm size	–	–	0.006	1.060	0.291	0.030	1.840	0.065*
GROWTH	Sales growth	–	–	0.018	3.920	0.000***	0.035	2.660	0.008***
LEV	Firm leverage	–	–	–0.157	–8.730	0.000***	–0.262	–5.120	0.000***
LIQ	Firm liquidity	–	–	–0.001	–0.600	0.550	–0.005	–0.780	0.438
AUDIT	Audit firm size	–	–	0.009	1.310	0.191	–0.008	–0.430	0.668
AGE	Firm age	–	–	0.022	1.610	0.108	0.007	0.200	0.845
COVID-19	Covid-19 Year dummy	–	–	–0.005	–0.820	0.411	0.004	0.230	0.816
YEAR	Year dummy	–	–	Included			Included		
INDUSTRY	Industry dummy	–	–	Included			Included		
Adjusted R ²				0.259			0.101		
Wald chi2(9)				146.79			47.43		
VIF				< 2			< 2		
Prob. (F)				0.000			0.000		
Number of observations				420			420		

***Significant at the 1% level, **Significant at the 5% level, *Significant at the 10% level



Table 9 2SLS regression results for the market-based performance measures (TQ and MBR)

Independent variables	Definition	Hyp	Exp. sign	Market-based performance measures					
				Model VII (TQ)			Model VIII (MBR)		
				Coeff	t-statistic	P > t	Coeff	t-statistic	P > t
Constant	Model constant	–	+	1.972	2.750	0.006***	1.720	1.460	0.143
<i>Ownership structure variables:</i>									
OWNC	Ownership concentration	H1	+	0.830	3.570	0.000***	0.569	1.500	0.135
MOWN	Managerial ownership	H2	+	3.227	5.400	0.000***	5.523	5.650	0.000***
<i>Control variables:</i>									
SIZE	Firm size	–	–	–0.172	–1.870	0.062*	–0.199	–1.320	0.187
GROWTH	Sales growth	–	–	0.095	1.280	0.202	0.110	0.910	0.365
LEV	Firm leverage	–	–	–1.833	–6.320	0.000***	0.535	1.130	0.259
LIQ	Firm liquidity	–	–	–0.093	–2.320	0.020**	–0.014	–0.220	0.829
AUDIT	Audit firm size	–	–	0.337	2.980	0.003***	0.433	2.340	0.019**
AGE	Firm age	–	–	0.754	3.350	0.001***	0.792	2.150	0.031**
COVID-19	Covid-19 Year dummy	–	–	–0.074	–0.750	0.454	–0.161	–1.000	0.319
YEAR	Year dummy	–	–	Included			Included		
INDUSTRY	Industry dummy	–	–	Included			Included		
Adjusted R ²				0.241			0.130		
Wald chi2(9)				133.88			63.16		
VIF				<2			<2		
Prob. (F)				0.000			0.000		
Number of observations				420			420		

***Significant at the 1% level, **Significant at the 5% level, *Significant at the 10% level

The findings of this research generate implications for investors, academics, and regulators since they demonstrate the impact of key ownership structure variables on both firm operational and market performance. If firm performance can be improved directly by adjusting shareholder structure and corporate governance practices, then the corporate sector and its investors, whether the latter are domestic or international, can enjoy enhanced value by selecting Saudi listed firms on the basis of higher ownership concentration and managerial ownership as a critical component of their portfolio selection strategy.

Finally, this study identifies some limitations that may be addressed in future research. First, while the research examines two important ownership structure/governance mechanisms, ownership concentration and managerial ownership, future research might also include other mechanisms such as government, institutional, family, and foreign ownership, when examining firm performance. Second, future research could also look into the endogenous nature of the relationship between corporate performance, ownership concentration, and managerial ownership whereby there are most likely unobservable factors that influence both ownership structures and firm performance. Third, the sample might be expanded with additional years of observations. Finally, as the focus of the study is the Saudi context, it could be

expanded to a comparative study of firm performance versus ownership concentration and managerial ownership across the Gulf Cooperation Council (GCC) region.

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References

- Abdallah, A., and A. Ismail. 2017. Corporate governance practices, ownership structure, and corporate performance in the GCC countries. *Journal of International Financial Markets, Institutions and Money* 46: 98–115.
- Abdelkarim, N., and S. Alawneh. 2009. The relationship between corporate governance and the performance of Palestinian firms: an empirical study. *The International Journal of Business and Finance Research* 3 (2): 105–119.
- Agrawal, A., and C.R. Knoeber. 1996. Firm performance and mechanisms to control agency problems between managers and



- shareholders. *The Journal of Financial and Quantitative Analysis* 31 (3): 377–397.
- Aktan, B., S. Turen, M. Tvaronavičienė, S. Celik, and H.A. Alsadeh. 2018. Corporate governance and performance of the financial firms in Bahrain. *Polish Journal of Management Studies* 17 (1): 39–58.
- Al-Abbas, M. 2009. Corporate governance and earnings management: An empirical study of the Saudi market. *The Journal of American Academy of Business* 15 (1): 301–310.
- Alabdullah, Tariq. 2018. The relationship between ownership structure and firm financial performance: Evidence from Jordan. *Benchmarking: An International Journal* 25 (1): 319–333.
- Al-Bassam, W.M., C.G. Ntim, K.K. Opong, and Y. Downs. 2018. Corporate boards and ownership structure as antecedents of corporate governance disclosure in Saudi Arabian publicly listed corporations. *Business and Society* 57 (2): 335–377.
- Al-Janadi, Y. 2021. Ownership structure and firm performance in the middle east: A meta-analysis. *Journal of Risk and Financial Management* 14 (577): 1–23.
- Al-Malkawi, H.A.N., and R. Pillai. 2018. On the relationship between corporate governance and firm performance: Evidence from GCC countries. *Research in International Business and Finance* 44: 394–410.
- Al-Matari, E.M., and A.S. Alarussi. 2016. The effect of the ownership structure characteristics on firm performance in Oman: Empirical study. *Corporate Ownership and Control* 13 (2): 93–100.
- Al-Razeen, A., and Y. Karbhari. 2004. Annual corporate information: Importance and use in Saudi Arabia. *Managerial Auditing Journal* 19: 117–133.
- Al-Saidi, M., and B. Al-Shammari. 2015. Ownership concentration, ownership composition and the performance of the Kuwaiti listed non-financial firms. *International Journal of Commerce and Management* 25 (1): 108–132.
- Al-Smadi, M.O. 2013. Examining the relationship between corporate governance and banks' performance, and risk in Saudi Arabia. *European Journal of Economics, Finance and Administrative Sciences* 16: 59–62.
- Amin, A.A., and A.M. Hamdan. 2018. Evaluating the effect of ownership structure on firm performance: Evidence from Saudi Arabian listed companies. *Journal of Economic Cooperation and Development* 39 (3): 65–92.
- Arayssi, M., and M. Jizi. 2018. Does corporate governance spillover firm performance? A study of valuation of MENA companies. *Social Responsibility Journal* 15: 597–620.
- Arora, A., A. Arora, C. Sharma, and C. Sharma. 2016. Corporate governance and firm performance in developing countries: Evidence from India. *Corporate Governance* 16 (2): 420–436.
- Atwill, T. 2014. *The opening of Saudi Arabia's markets and its impact on emerging market investing*. London: Parametric Portfolio Associates LLC.
- Balatbat, M.C.A., S.L. Taylor, and T.S. Walter. 2004. Corporate governance, insider ownership and operating performance of Australian initial public offerings. *Accounting and Finance* 44 (3): 299–328.
- Basuony, M.K.A., and Al-Baidhani. Ehab. 2014. The effect of corporate governance on bank financial performance: Evidence from the Arabian Peninsula. *Corporate Ownership and Control* 11 (2–1): 178–191.
- Bhagat, S., and B. Bolton. 2008. Corporate governance and firm performance. *Journal of Corporate Finance* 14 (3): 257–273.
- Boshnak, H.A. 2021. Corporate governance mechanisms and firm performance in Saudi Arabia. *International Journal of Financial Research* 12 (3): 446–465.
- Boyle, G.W., R.B. Carter, and R.D. Stover. 1998. Extraordinary antitakeover provisions and insider ownership structure: The case of converting savings and loans. *Journal of Financial and Quantitative Analysis* 33 (2): 291–304.
- Cabural, M. 2015. Stock market opening. available at: www.valuewalk.com
- Carney, M., and R. Gedajlovic. 2001. Corporate governance and firm capabilities: A comparison of managerial, alliance, and personal capitalisms. *Asia Pacific Journal of Management* 18 (3): 335–354.
- Cho, D., and J. Kim. 2007. Outside directors, ownership structure and firm profitability in Korea. *Corporate Governance: An International Review* 15 (2): 239–250.
- Claessens, S. 2006. Corporate governance and development. *World Bank Research Observer* 21 (1): 91–122.
- Corporate Governance Regulations. 2017. Saudi Arabian Capital Market Authority CG regulations, Retrieved from https://cma.org.sa/en/RulesRegulations/Regulations/Documents/CGRegulations_en.pdf.
- Demsetz, H. 1983. The structure of ownership and the theory of the firm. *The Journal of Law and Economics* 26 (2): 375–390.
- Demsetz, H., and B. Villalonga. 2001. Ownership structure and corporate performance. *Journal of Corporate Finance* 7 (3): 209–233.
- Denis, D.J., and D.K. Denis. 1994. Majority owner-managers and organizational efficiency. *Journal of Corporate Finance* 1: 91–118.
- Din, S.U., M. Arshad Khan, M.J. Khan, and M.Y. Khan. 2021. Ownership structure and corporate financial performance in an emerging market: A dynamic panel data analysis. *International Journal of Emerging Markets* 17 (8): 1973–1997.
- Eisenhardt, K.M. 1989. Building theories from case study research. *Academy of Management Review* 14 (4): 532–550.
- Elsayed, K. 2007. Does CEO duality really affect corporate performance? *Corporate Governance: An International Review* 15 (6): 1203–1214.
- Fama, E.F., and M.C. Jensen. 1983. The separation of ownership and control. *Journal of Law and Economics* 26 (2): 301–325.
- Farooque, O.A., T. van Zijl, K. Dunstan, and A.W. Karim. 2010. Coderministic relationship between ownership concentration and corporate performance: Evidence from an emerging economy. *Accounting Research Journal* 23 (2): 172–189.
- Gillan, Stuart L. 2006. Recent developments in corporate governance: An Overview. *Journal of Corporate Finance* 12 (3): 381–402.
- Grossman, S., and O. Hart. 1980. Takeover bids, the free-rider problem, and the theory of the corporation. *Bell Journal of Economics* 11 (1): 42–64.
- Hamdan, A. 2018. Board interlocking and firm performance: The role of foreign ownership in Saudi Arabia. *International Journal of Managerial Finance* 14: 266–281.
- Haniffa, R., and M. Hudaib. 2006. Corporate governance structure and performance of Malaysian listed companies. *Journal of Business Finance and Accounting* 33 (7): 1034–1062.
- Hausman, A. 1978. Specification tests in econometrics. *Econometrica* 46 (6): 1251–1271.
- Helmi, A., M. Abdullatif, and M.S. Basaif. 2021. The impact of firm characteristics on firm performance during the Covid-19 pandemic: Evidence from Saudi Arabia. *Asian Economic and Financial Review* 11 (9): 693–709.
- IASPlus. (2020). Saudi Arabia. Retrieved from <http://www.iasplus.com/en/jurisdictions/asia/saudi-arabia>.
- Jensen, M., and W. Meckling. 1976. Theory of the firm: Managerial behavior, agency cost, and ownership structure. *Journal of Financial Economics* 3 (4): 305–360.
- Kapopoulos, P., and S. Lazaretou. 2007. Corporate ownership structure and firm performance: Evidence from Greek firms. *Corporate Governance: An International Review* 15 (2): 144–158.



- Kumar, N., and J.P. Singh. 2013. Effect of board size and promoter ownership on firm value: Some empirical findings from India. *Corporate Governance: THE International Journal of Business in Society* 13 (1): 88–98.
- La Porta, R., F. Lopez-de-Silanes, and A. Shleifer. 1999. Corporate ownership around the world. *Journal of Finance* 54 (2): 471–518.
- Lauterbach, B., and A. Vaninsky. 1999. Ownership structure and firm performance: Evidence from Israel. *Journal of Management Governance* 3 (2): 189–201.
- Mak, Y.T., and Y. Kusnadi. 2005. Size really matters: Further evidence on the negative relationship between board size and firm value. *Pacific-Basin Finance Journal* 13 (3): 301–318.
- Mishra, R., and S. Kapil. 2017. Effect of ownership structure and board structure on firm value: Evidence from India. *Corporate Governance* 17 (4): 700–726.
- Morck, R., A. Shleifer, and R.W. Vishny. 1988. Management ownership and market valuation, an empirical analysis. *Journal of Financial Economics* 20 (1/2): 293–315.
- OECD. 2004. OECD Principles of Corporate Governance.
- Ogabo, B., G. Ogar, and T. Nuipoko. 2021. Ownership structure and firm performance: The role of managerial and institutional ownership-evidence from the UK. *American Journal of Industrial and Business Management* 11: 859–886.
- Pfeffer, J., and G.R. Salancik. 2003. *The external control of organizations: A resource dependence perspective*. California: Stanford University Press.
- Piesse, J., R. Strange, and F. Toonsi. 2012. Is there a distinctive MENA model of corporate governance? *Journal of Management and Governance* 16: 645–681.
- Rouf, M.A., and M.S. Hossain. 2018. Ownership distribution and value of the banks in Bangladesh. *International Journal of Managerial and Financial Accounting* 10 (4): 378–390.
- Shahrier, N.A., J.S.Y. Ho, and S.S. Gaur. 2020. Ownership concentration, board characteristics, and corporate performance among Shariah-compliant companies. *Journal of Management and Governance* 24 (2): 365–388.
- Shan, Y.G. 2019. Managerial ownership, board independence and firm performance. *Accounting Research Journal* 32 (2): 203–220.
- Shleifer, A., and R.W. Vishny. 1986. Large shareholders and corporate control. *Journal of Political Economy* 94 (3): 461–488.
- Slovin, M.B., and M.E. Sushka. 1993. Ownership concentration, corporate control activity, and firm value: Evidence from the death of inside blockholders. *Journal of Finance* 48 (4): 1293–1321.
- Soliman, M.M. 2013. Ownership structure, board composition and dividend policies: Evidence from Saudi Arabia. Available at SSRN: <https://ssrn.com/abstract=2258399>.
- Talab, H.R., K.B.A. Manaf, and S.S.D.A. Malak. 2018. Ownership structure, external audit and firm performance in Iraq. *Social Science and Humanities Journal* 2: 343–353.
- Vafeas, N., and E. Theodorou. 1998. The relationship between board structure and firm performance in the UK. *The British Accounting Review* 30 (4): 383–407.
- Wang, H., J. Wu, Y. Yang, R. Li, and Y. Liu. 2019. Ownership concentration, identity and firm performance: Evidence from China's listed firms. *Emerging Markets Finance and Trade* 55 (15): 3653–3666.
- Yasser, Q.R., and A. Al-Mamun. 2015. The impact of audit committee characteristics on firm performance: Evidence from Pakistan. *New Zealand Journal of Applied Business Research* 13 (1): 35–55.
- Zeckhauser, Richard J., John Pound. 1990. Are large shareholders effective monitors? An investigation of share ownership and corporate performance. In *Asymmetric Information, Corporate Finance, and Investment*. Chicago: University of Chicago Press, 1: 80–149.

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