

The Effect of Board Composition and Ownership Structure on Firm Value: Evidence from Jordan

Rafat Salameh SALAMEH¹, Osama J. AL-NSOUR², Khalid Munther LUTFI³,
Zaynab Hassan ALNABULSI⁴, Eyad Abdel-Halym HYASAT⁵

Received: November 10, 2022 Revised: February 21, 2023 Accepted: March 01, 2023

Abstract

This study aims to investigate the effect of the composition of the board and ownership structure on a firm's value in Jordanian firms. Specifically, it aims to determine the effect of board size, (CEO) duality, and family, foreign, institutional, and government ownership on a firm's value. An ordinary least square regression (OLS) was employed to examine the study hypotheses in a sample of 35 Jordanian industrial firms (175 firm-year observation) for a period of five years from 2016–2020. As measured by Tobin's Q (Q ratio) and market-to-book (MB ratio) for Jordanian industrial firms listed on Amman Stock Exchange (ASE). The result found that foreign ownership, institutional ownership, and family ownership have a significant and positive effect on firm value. By contrast, government ownership does not have a significant effect on firm value. With respect to board composition (CEO duality and board size), the study results found no evidence to support the effect of board composition on firm value. The study recommended the concerned authorities with several recommendations, most notably: taking the necessary measures to ensure the continuity and growth of family businesses because of their positive impact on the value of the company and economic growth, spreading awareness about how governance protects the interests of investors.

Keywords: Board Composition, Ownership Structure, Firm Value, Jordan

JEL Classification Code: G32, D24, M41

1. Introduction

In recent years, board composition and ownership structure and their effect on a firm's value have been extensively examined in developed and developing markets.

¹First Author. Faculty of Business, Al-Balqa Applied University, Jordan. Email: dr_rafats@bau.edu.jo

²Al-Balqa Applied University, Jordan. Email: osama.alnsour@bau.edu.jo

³Cost Controller, World Islamic Sciences and Education University, Jordan. Email: khalidml@gmail.com

⁴Corresponding Author. Associate Professor, Department of Banking and Financial Sciences, Faculty of Business, Al-Balqa Applied University, Jordan. [Postal Address: Al-Salt 19117, Jordan] Email: zynaba_bau@bau.edu.jo

⁵Faculty of Business, Al-Balqa Applied University, Jordan. Email: hyasat.eyad@bau.edu.jo

© Copyright: The Author(s)

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

This is because board composition and the ownership structure pattern are considered to be important drivers of management incentives and therefore maximize the value of the firm and its performance. Jensen and Meckling's (1976) agency theory states that the separation of ownership from management leads to agency problems when the manager's self-interests and shareholders are not aligned (Lappalainen & Niskanen, 2012). Agency problems may cause the firm's value to decline because of agency costs (Jensen & Meckling, 1976). To minimize the agency cost, the composition of the board and ownership structure can be employed as agency mechanisms (Fama & Jensen, 1983). These mechanisms are also known as corporate governance. OECD (2004) defined corporate governance as "a set of relationships between a company's management, its board, its shareholders, and other stakeholders. Corporate governance also provides the structure through which the company's objectives are set. The means of attaining those objectives and monitoring performance are determined". OECD (2004) further argued that "Good corporate governance should provide

proper incentives for the board and management to pursue objectives that are in the interests of the company and its shareholders and should facilitate effective monitoring. The presence of an effective corporate governance system within an individual company and across an economy helps to provide a degree of confidence necessary for the proper functioning of a market economy (Al-Najjar, 2010).

The composition of the board and ownership structure and their impact on a firm's value are not new. There is a growing trend of corporate and law literature that links board composition and ownership structure to a firm's value. Most of these studies have focused on developed countries (Bravo et al., 2018; Young et al., 2008; Ghosh, 2007; Bartholomeusz & Tanewski, 2006; Bozec, 2005; Anderson & Reeb, 2004; Shleifer & Vishny, 1997; Davis et al., 1997; Yermack, 1996; Fama & Jensen, 1983). More attention has been paid recently to the impact of board composition, ownership structure, and firm value in developing countries (Queiri et al., 2021; Al-Nsour & Al Hiyari, 2020; Bataineh et al., 2019; Mardnly et al., 2018; Marashdeh, 2014; Arouri et al., 2014; Mollah et al., 2012; Abu-Serdaneh et al., 2010; Ehikioya, 2009; Alwshah, 2009). However, empirical studies' results are contradictory and inconclusive regarding whether specific corporate governance mechanisms can maximize shareholder wealth and increase a firm's value. The relationship between corporate governance, ownership structure, and firm performance is the subject of ongoing debate in the literature, and has no consensus among practitioners and scholars on this issue. Each country has its legal framework and characteristics. Therefore, it has been proposed that research on corporate governance and ownership structures should be country-specific (Queiri et al., 2021; Lappalainen & Niskanen, 2012). Therefore, in this context, this study examines the effect of board composition and ownership structure on firm value in Jordanian industrial firms listed on the Amman Stock Exchange (ASE) over the period 2016–2020.

2. Literature Review and Hypotheses

2.1. The Composition of The Board and Firm's Value

2.1.1. Board Size

Board size is one of the most important corporate governance mechanisms investigated in the literature. It specifies the board's participation and responsibility for managing the firm and its operations (Saidat et al., 2019; Ehikioya, 2009).

Jordanian Corporate Governance Code (CGC) states that the board size should be small enough (not less than three) for efficient decision-making and large enough (not more

than thirteen) for managers to contribute their knowledge and experiences sufficiently. However, existing literature provides no consensus about the effect of board size (large or small) on a firm's value. One group of researchers claims that a smaller board size could improve the firm value. A larger board size decrease communication and decision-making effectiveness due to the increasing difficulties of coordination among the board member (Raheja, 2005). They require a higher administration cost, limit the time a manager may use to express their ideas and opinions about the firm's performance in board meetings, and lead to less effective monitoring roles (Nas & Kalaycioglu, 2016; Al-Khoury, 2005; Yermack, 1996; Lipton & Lorsch, 1992).

In contrast, other groups of researchers have supported a large board size. Large boards are more effective because they can introduce a broader perspective on managerial issues and better guidance on the firm strategic decisions (Pearce & Zahra, 1992). Large boards could enhance firm value because they provide more monitoring resources, bring more diversified experience, skills, and knowledge that help firms to decrease environmental uncertainty and bring substantial resources (Kao et al., 2018). According to Salem et al., (2019), the board size affected firm value in both USA and Egypt negatively and significantly, while Thompson et al., (2016) concluded that board size affects the value of listed petroleum firms in Nigeria. Still, the direction and extent of the association vary from one constituent to the other. However, previous studies (Marashdeh, 2014; Arouri et al., 2014; Mollah et al., 2012; Ehikioya, 2009; Ghosh, 2007) found an insignificant relationship between firm value and board size. Because the expected relationship between firm value and board size is unclear, our expectations are open. Drawing on these arguments, we formulate the following hypothesis:

H1: *Board size has a significant effect on a firm's value in Jordan.*

2.1.2. CEO Duality

Leadership structure or CEO duality is another corporate governance mechanism that might affect firm value. CEO duality exists when the same person holds the position of chief executive officer (CEO) and chairperson of the board. According to agency theory, proponents of the separation of the chairperson and CEO documented that combining the decision management and decision control authority within a firm in the hands of one person leads to internal control failure and reduces board effectiveness in monitoring the CEOs. Therefore, CEO duality would cause an increase in the agency's cost and reduce the firm's value (Jensen, 1993; Fama & Jensen, 1983). On the other hand, stewardship theory advocates argue that CEO duality will reduce agency cost

and improve firm value because management effectiveness is based on the unity of control and command system.

When the responsibilities and decision-making are assigned to the same person (unified leadership), this might enables a better understanding and knowledge of the firm operations and leads to better decisions and goal alignment (Gaur et al., 2015; Marashdeh, 2014; Davis et al., 1997). Some studies found a positive relationship between CEO duality and a firm's value (Anum & Ghazali, 2020; Bataineh et al., 2019; Mishra & Kapil, 2018; Marashdeh, 2014; Sheikh et al., 2019), while other studies reported a negative relationship between CEO duality and firm's value (Kao et al., 2018; Ehikioya, 2009; Lappalainen & Niskanen, 2012; Bozec, 2005). Salem et al. (2019) found that CEO duality has a positive effect on firm value in Egypt while it has a negative effect on firm value in the USA. Other studies found an insignificant association between CEO duality and a firm's value (Arouri et al., 2014; Turki & Ben Sedrine, 2012; Griffith et al., 2002). Because the expected relationship between CEO duality and the firm's value is unclear, our expectations are open. Given these arguments, we formulate the following hypothesis:

H2: CEO duality has a significant effect firm's value in Jordan.

2.2. Ownership Structure and Firm's Value

2.2.1. Family Ownership

In Jordan, as in other emerging economies, a large number of firms are concentrated ownership, frequently dominated by families, where the family members often hold significant leadership positions on the corporate board and have significant influence. Because the founder and family members manage the family firms, unique relationships develop between the family owners; that is, Firms controlled by families might be able to exert great efforts to increase long-term assets to maintain their reputation, which in turn mitigates the agency costs (Bartholomeusz & Tanewski, 2006).

Family relationships and values can better monitor the management effectively, resulting in better firm value (Arouri et al., 2014). On the other hand, family control firms are more likely to cause type II agency conflict problems (controlling versus minority shareholders) (Anderson & Reeb, 2004). Controlling families have incentives and power to expropriate the minority shareholders' interests (Fama & Jensen, 1983). The empirical evidence on the impact of family ownership on firm value is mixed. Ehikioya (2009), Alwshah (2009), and Omran et al. (2008) reported a negative association between family ownership and firm value. It is found that the board ownership structure affects the value of listed petroleum firms in Nigeria and varies from one constituent to another. However, other studies find a positive

relationship (Sudiyatno et al., 2020; Bataineh et al., 2019; Al-Nsour, 2019; Kao et al., 2018; Al-Saidi & Al-Shammari, 2015). Drawing on these discussions, the following hypotheses are proposed:

H3: Family ownership has a significant positive effect on the firm's value in Jordan.

2.2.2. Foreign Ownership

Another important ownership structure aspect, which seems to play a key role in improving firm effectiveness, is the nature of the shareholders. Foreign investors are a key mechanism for better performance (Alodat et al., 2021; Al-Nsour & Al Hiyari, 2020). Foreign investors usually invest in profitable firms because they perform sophisticated analyses before acquisition. So, when foreign ownership increases, firm value is also expected to increase (Abu-Serdaneh et al., 2010). Foreigners might be able to monitor the firms more efficiently than local investors "because they are outside the local social networks from which the behaviour of organizational standards are created, and they are therefore more likely to push for well-managed and transparent operations" (Young et al., 2008). Moreover, Foreigners have the skills and experience to establish better global standards and practices (Al-Nsour & Al Hiyari, 2020).

Foreigners can provide advantages by using technological capabilities, which permit the firm to be more productive and efficient than local firms by reducing operating expenses and producing revenues for the firm (Arouri et al., 2014). In addition, foreign investors must preserve their reputations and meet laws, regulations, and instructions on corporate governance practices in the host country (Setiawan et al., 2016). The majority of prior studies that studied the effect of foreign ownership on a firm's performance support a positive relationship between foreign ownership and firm value (Kao et al., 2018; Mardny et al., 2018; Marashdeh, 2014; Arouri et al., 2014; Mollah et al., 2012; Omran et al., 2008). In contrast, other studies support a negative relationship between foreign ownership and performance (Abdullah, 2018; Abu-Serdaneh, & al., 2010). Considering the findings of most previous studies on the relationship between foreign ownership and firm value, the current study predicts that increasing foreign ownership will lead to increased firm value. Therefore, the following hypothesis is formulated:

H4: Foreign ownership has a significant positive effect on the firm's value in Jordan.

2.2.3. Institutional ownership

Institutional ownership is considered one of the most important external control mechanisms affecting firm value. Institutional investors have more significant incentives to

monitor managers and enhance firm value because they have the ability and the resources to mitigate opportunistic behavior and control management's exploitation of investors (Shleifer & Vishny, 1997). Institutional investors have sufficient expertise and power, which leads managers to make rational decisions directly through their ownership or indirectly through their shares trading (Saidat et al., 2019).

Regarding the relationship between firm value and institutional investors, there are three hypotheses; "The efficient monitoring hypothesis" states that institutional ownership has the necessary monitoring tools to reduce costs. Therefore, this theory documented a positive relationship between institutional ownership and performance (Alipour, 2013). "The conflict-of-interest hypothesis" and "The strategic alignment hypothesis" predicts a negative relationship between institutional ownership and firm value (Pound, 1988). Previous studies that examined the effect of institutional ownership on firm value have produced diverse outcomes. They reported a positive relationship with firm performance (Queiri et al., 2021; Bataineh et al., 2019; Kao et al., 2018; Alipour, 2013; Mollah et al., 2012; Al-Najjar, 2010; Omran et al., 2008; Young et al., 2008; Zeitun & Tian, 2007). While other studies found a negative relationship (Abu-Serdaneh et al., 2010; Alwshah, 2009). However, Al-Nsour and Al Hiyari (2020), Al-Saidi and Al-Shammari (2015), and Al-Saidi (2013) found that institutional ownership had no significant relationship with firm value. Drawing on the above arguments, the following hypothesis is proposed:

H5: *Institutional ownership has a significant positive effect on a firm's value in Jordan.*

2.2.4. Government (State) Ownership

The relationship between government (state) ownership and firm value has been motivated by many previous empirical studies. State ownership mitigates agency costs because the government agencies have different objectives relating to economic regulation and development, minority shareholders' rights protection, and reduction of asymmetric information problems (Chhibber & Majumdar, 1998). Therefore, government ownership is likely to improve performance and firm value. On the other hand, Shleifer and Vishny (1997) found that state ownership is subject to agency problems and has a negative impact on firm performance; this might be due to the tendency of managers to seek their own self-interests as opposed to shareholders' wealth. Alipour (2013) and Zeitun and Tian (2007) also documented a negative relationship between government ownership and firm performance. Xu and Wang (1997) observed that firm profitability, labor productivity, and efficiency declines as the percentage of government ownership increases, indicating

that government ownership does not help increase firms' value. Elsewhere, a relationship was not found between government ownership and firm value (Darko et al., 2016; Arouri et al., 2014; Marashdeh, 2014). Based on the above discussion, we expect government ownership to minimize firm value. Therefore, the following hypothesis is proposed:

H6: *Government ownership significantly negatively affects the firm's value in Jordan.*

3. Methodology

3.1. Data Sample

The current paper investigates the effects of board composition and ownership structure on a firm's value. The study sample comprises all manufacturing firms listed on (ASE). The industrial sector is considered one of the most important sectors in Jordan, contributing about 21.5% of the GDP (Association of Banks in Jordan, 2022). As of 31 December 2020, the total number of manufacturing companies listed on (ASE) was 56. The final sample for this study consisted of 35 companies across a period of five years (2016–2020), constituting 63% of the total population, with a total number of 175 firm-year observations, as detailed in Table 1, which describes the sample selection procedure. Annual reports, annual financial statements, the composition of the board, and ownership structure data are drawn from the (ASE), official corporate websites, and the Securities Depository Canter.

3.2. Variable Measurement

3.2.1. Dependent variable

This study uses market-based performance measurements: Tobin's Q (Q ratio) and the market-to-book ratio to measure a firm's value. Tobin's Q and market-to-book ratios are forward-looking measures; they are frequently used to measure firm value because they reflect the shareholders' expectations of future earnings stream. Tobin's Q (Q ratio) is calculated as the ratio of the market value of equity plus the book value of total debt (short-term and long-term debt) divided by the book value of total assets (Alodat et al., 2021; Al-Nsour & Al Hiyari, 2020; Saidat et al., 2019; Al-Nsour

Table 1: The Sample Selection Procedure

The total number of companies on (ASE), As of 31 December 2020	56
Less: Incomplete data or not available annual reports	(21)
Final sample	35
Percentage	63%

& Al-Muhtadi, 2019; Mishra & Kapil, 2018; Palaniappan, 2017; Shahwan, 2015; Arouri et al., 2014; Al-Najjar, 2010). The market to book (denoted as MB) is measured as the ratio of the market value of equity divided by the book value of equity (Kao et al., 2018; Shahwan, 2015; Arouri et al., 2014; Siahaan, 2013; Turki & Ben Sedrine, 2012). The market-to-book ratio (MB) can also be calculated by dividing the stock price per share by the book value per share.

3.2.2. Independent Variables

The independent variables are corporate board composition and ownership structure: Board size, CEO duality, family ownership, foreign ownership, Institutional ownership, and government (state) ownership. Consistent with previous studies regarding the relationship between corporate board composition, ownership structure, and firm value (Al-Nsour & Al Hiyari, 2020; Saidat et al., 2019; Bataineh et al., 2019; Al-Nsour, 2019; Kao et al., 2018; Mollah et al., 2012; Ehikioya, 2009; Zeitun & Tian, 2007). Board size (BSIZE) is measured as the total number of directors on the corporate board. CEO duality (denoted as CEODU) is a dummy variable that takes the value of (1) if the CEO is also the chairperson of the board of directors and (0) otherwise. Family ownership (denoted as FAMOWN) is measured as the total percentage of shares owned by family members. Foreign ownership (denoted as FOROWN) is measured as the total percentage of shares owned by foreign shareholders. Institutional ownership (INSOWN) is measured as the total percentage of shares owned by institutional shareholders. Government ownership (denoted as GOVOWN) is calculated as the total percentage of shares owned by government shareholders.

3.2.3. Control Variable

The estimated regression models controlled several company characteristics that may affect the firm's value. The control variables employed in this study have been chosen with reference to the most repeated empirical studies (Al-Nsour & Al Hiyari, 2020; Kao et al., 2018; Zedan & Abu Nassar, 2014; Al-Saidi, 2013; Abu-Serdaneh et al., 2010). It has been argued that large firms have a positive relationship with firm value. Large firms have a better opportunity to access external sources of funds at low cost and consequently maximize firm value (Joh, 2003). Large firms may exhibit higher value because they are more efficient due to economies of scale; have the ability to attract qualified managers and employees; are more able to reach markets and customers, and have the ability to diversify their operations (Abu-Serdaneh et al., 2010). However, larger firms are more diversified, subject to higher agency costs, and have a lower default likelihood, decreasing their bankruptcy risk (Kao et al., 2018; Al-Khoury, 2005).

On the other hand, other studies argued that small companies are better than large ones because they have greater growth opportunities and fewer coordination problems (Arouri et al., 2014). Small companies are more likely to comply with corporate governance mechanisms and rules to attract profitable investments, which leads to more external fund sources to invest in these opportunities and increase firm profitability (Saidat et al., 2019). Many researchers have reported inconclusive outcomes relating to the effect of firm size on the firm's value, but there is an agreement on the links between the firm's size and firm's value (Saidat et al., 2019). Firm size (denoted as FSIZE) is measured as a natural logarithm of total assets. Therefore, we do not predict a sign of firm size.

Firms with higher growth opportunities are more likely to deliver a positive signal about the firm's value. This is because investors prefer to make investments in high-growth rate firms (Al-Najjar & Taylor, 2008). Sales growth enhances utilization capacity by spreading fixed expenditures over more revenues and thus resulting in higher profits (Kao et al., 2018). High-growth opportunities firms are expected to have a high level of information asymmetries and agency problems; therefore, they are more likely to disclose more information to satisfy stakeholders (Bravo et al., 2018). The quantity and the quality of information disclosure are associated with higher firm valuation (Mardnly et al., 2018). Growth (denoted as GROW) is measured by the current year's sales revenue ratio minus the previous year's sales revenue divided by the previous year's sales revenue. Accordingly, the study is expected that growth will have a positive relationship with the value of the firm.

Leverage (capital structure) represents the proportions of the firm's financing from short and long-term debt and equity (Ross et al., 2002). High leverage levels could adversely affect the firm's value due to the accompanying bankruptcy costs and value-destroying investments (Myers, 1977). Agency theory has demonstrated that the firm can reach optimal capital structure by reducing the agency conflicts between agents (managers) and the principals (shareholders) (agency conflicts problem, type 1); therefore, the firm's value will enhance by using debt to monitor the managers and not to maximize their interest at the expense of the shareholders (Jensen & Meckling, 1976; Al-Nsour & Al-Muhtadi, 2019). Similarly, the pecking order theory posits that debt is negatively associated with a firm's value and profitability. The firm's optimal capital structure cannot be easily determined because it uses equity capital, debts, and equity to finance its new investments (Al-Nsour & Al-Muhtadi, 2019). Therefore, this study expects LEV to negatively affect a firm's value. Leverage (denoted as LEV) is measured by the total liabilities ratio divided by the total assets' book value. Table 2 presents a summary of the operationalization of the variables.

Table 2: Study Variables and Their Measurements

Variables	Acronym	Measurement	Expected sign
Panel A: Dependent Variables			
Tobin's Q	Q ratio	The ratio of the market value of equity plus the book value of total debt (short-term and long-term debt) divided by the book value of total assets	
The market-to-book ratio	MB	The ratio of the market value of equity divided by the book value of equity	
Panel B: Independent Variables			
Board size	BSIZE	The total number of directors on the corporate board	?
CEO duality	CEODU	The dummy variable takes the value of (1) if the CEO is also the chairman of the board of directors and (0) otherwise	?
Family ownership	FAMOWN	The total percentage of shares owned by family members	+
Foreign ownership	FOROWN	The total percentage of shares (capital) that owned by foreign investors	+
Institutional ownership	INSOWN	The total percentage of shares (capital) owned by institutional investors	+
Government ownership	GOVOWN	The total percentage of shares (capital) owned by the government	-
Panel C: Control Variables			
Firm size	FSIZE	Natural logarithm of total assets	?
Growth	GROW	The ratio of the current year's sales revenue minus the previous year's sales revenue divided by the previous year's sales revenue	+
Leverage	LEV	The ratio of total liabilities divided by the book value of total assets	-

3.3. The Study Models

To examine the effects of board composition and the ownership structure on a firm's value, the current study adopts the following regression models:

Model 1:

$$\text{Tobin's Q}_{it} = \alpha_i + \beta_1 \text{BSIZE}_{it} + \beta_2 \text{CEODU}_{it} + \beta_3 \text{FAMOWN}_{it} + \beta_4 \text{FOROWN}_{it} + \beta_5 \text{INSOWN}_{it} + \beta_6 \text{GOVOWN}_{it} + \beta_7 \text{FSIZE}_{it} + \beta_8 \text{GROW}_{it} + \beta_9 \text{LEV}_{it} + \varepsilon_{it}$$

Model 2:

$$\text{MB}_{it} = \alpha_i + \beta_1 \text{BSIZE}_{it} + \beta_2 \text{CEODU}_{it} + \beta_3 \text{FAMOWN}_{it} + \beta_4 \text{FOROWN}_{it} + \beta_5 \text{INSOWN}_{it} + \beta_6 \text{GOVOWN}_{it} + \beta_7 \text{FSIZE}_{it} + \beta_8 \text{GROW}_{it} + \beta_9 \text{LEV}_{it} + \varepsilon_{it}$$

Where:

Tobin's Q, and MB = the firm's value, α = the constant, β_1 to β_9 = the coefficients of the variables, BSIZE = board size, CEODU = CEO duality, FAMOWN = family ownership, FOROWN = foreign ownership, INSOWN = institutional

ownership, GOVOWN = government ownership, FSIZE = firm size, GROW = growth, LEV = leverage, i and t = the number of firms and time, respectively, ε = the error term.

4. Results and Discussion

4.1. Descriptive Statistics

Table 3 displays the variable descriptive statistics. It displays the mean, standard deviation, minimum, and maximum of the variables.

For dependent variables (Firm's value), as can be observed from Table 3, the results show that the average (Q ratio) is 1.286, the minimum value is 0.107, and the maximum value is 7.17. As regards the market-to-book ratio (MB), the results indicate that the minimum value of MB is 0, while the maximum value is 19.23, with an average of 2.196 for the overall sample. With respect to board composition, the results report that the average number of directors on the board over the period (BSIZE) is 9.514, with a minimum value of 5 and a maximum value of 13 members. CEO duality (CEODU) registers an overall mean value of 0.204, meaning that 20.4% of Jordanian companies' CEOs are on the board of directors. With regard to ownership structure variables, the finding

Table 3: Variables Descriptive Statistics

Variables	Mean	Standard Deviation	Minimum	Maximum	Observations
Tobin's Q	1.286	0.964	0.107	7.17	175
MB	2.196	3.161	0.000	19.23	175
BSIZE	9.514	2.218	5.000	13.00	175
CEODU	0.204	0.429	0.000	1.00	175
FAMOWN	0.493	0.246	0.000	0.81	175
FOROWN	0.182	0.268	0.000	0.95	175
INSOWN	0.311	0.204	0.000	0.92	175
GOVOWN	0.118	0.129	0.000	0.45	175
FSIZE	17.614	2.464	10.971	21.01	175
GROW	0.225	1.414	-0.407	10.01	175
LEV	0.351	0.171	0.096	1.23	175

Table 4: Pearson Correlations Matrix

Variables	Tobin's Q	MB	BSIZE	CEODU	FAMOWN	FOROWN	INSOWN	GOVOWN	FSIZE	GROW	LEV
Tobin's Q	1										
MB	0.080	1									
BSIZE	-0.046	0.120	1								
CEODU	-0.045	0.019	0.250**	1							
FAMOWN	0.073**	0.211**	-0.001	-0.010	1						
FOROWN	0.078**	0.243**	0.004	0.006	0.002	1					
INSOWN	0.054**	0.184**	-0.002	-0.014	0.012**	0.012**	1				
GOVOWN	-0.010	-0.070	0.002	0.004	-0.004	-0.004	-0.003	1			
FSIZE	-0.207	-0.490	0.156**	0.075	-0.089	-0.089	-0.059	0.073**	1		
GROW	-0.227	-0.333	0.016	-0.032	-0.054	0.054	-0.042	-0.026	0.692*	1	
LEV	0.000	0.030	-0.002	0.012	-0.004	-0.004	0.009*	0.004	0.011	-0.139	1

**Significant at the 0.05 and 0.01 levels, respectively.

reveals that the mean of family ownership (FAMOWN) was 49.3%, with a minimum value of 0 and a maximum value of 81%. The mean of Institutional ownership (INSOWN) accounts for 31.1%, with 0 minimum and 92% maximum values. Foreign ownership (FOROWN) registers a mean of 18.2%, with a 0 minimum value and 95% maximum value. Finally, Government ownership (GOVOWN) recorded a mean of 11.8%, with a 0 minimum value and 45% maximum value. With respect to control variables, the average firm size (FSIZE) is 17.614, the average growth (GROW) is 22.5%, and the average leverage is 35.1%.

4.2. Correlation Analysis and Multi-Collinearity

Table 4 provides Pearson correlation matrix results amongst the independent variables employed in the

regression models. It could be observed that the correlation coefficients between all independent variables were not strongly correlated with each other. The highest simple correlation coefficient is between (FSIZE) and the market-to-book ratio (MB), suggesting no multi-collinearity problems. Multi-collinearity is considered a problem when the correlation coefficient between the independent variables exceeds 0.80 (Gujarati, 2004).

This is further supported by using the variance inflation factor (VIF) and tolerance (1/VIF) values for all the independent variables to double-check for potential multi-collinearity problems. As suggested by Hair et al. (2010), when the values of (VIF) exceed 10, and the values of tolerance are less than 0.10, that indicates potential multi-collinearity problems. The results of VIF and Tolerance are shown in Table 5. All (VIF) values for all variables are less than the threshold value of

10, with tolerance values that are more than 0.10. The (VIF) values vary from 1.124 to 1.757, with a mean of 1.422. The largest VIF value is for foreign ownership (FOROWN) (VIF = 1.757), whereas the lowest (VIF) value is for growth (GRO) (VIF = 1.124). Therefore, the regression models employed in this study are substantially free from serious potential multicollinearity problems.

4.3. Regression Results

Table 5 presents the regression analysis results. This study presents two firm's value measures: (Q ratio) and

Table 5: Multi-Collinearity Test (VIF and Tolerance)

Variables	VIF	Tolerance (1/VIF)
BSIZE	1.350	0.741
CEODU	1.275	0.784
FAMOWN	1.414	0.707
FOROWN	1.757	0.569
INSOWN	1.468	0.681
GOVOWN	1.436	0.696
FSIZE	1.650	0.606
GROW	1.124	0.890
LEV	1.329	0.752
Mean VIF	1.422	

market-to-book ratio (MB). In Tobin's Q model, the adjusted R^2 value = 0.268, which means that the independent variables explain 26.8% of the dependent variable (Tobin's Q). In (the MB) model, the adjusted R^2 value = 0.155, which means that the independent variables explain 15.5% of the dependent variable (MB). It can be seen that the F -statistics of model 1 (Q ratio) and model 2(MB) are 3.321 and 2.161 respectively, indicating that the results are highly significant at 0.000 (p -value < 0.05).

Regarding board composition, we found that the coefficients of (BSIZE) are not significantly related to both (Q ratio) and MB, indicating that the board size is irrelevant to the determinants of the firm's value in Jordan. Therefore, H1 is not supported. This result is consistent with previous studies (Darko et al., 2016; Marashdeh, 2014; Arouri et al., 2014; Mollah et al., 2012; Ehikioya, 2009; Ghosh, 2007). One possible explanation could be due to the corporate board of directors' characteristics, such as concentrated ownership. Regarding (CEODU) the results found that it is not significantly related to both Tobin's Q and MB, suggesting that CEO duality is irrelevant to the determinants of a firm's value in Jordan. Therefore, H2 is not supported. This result is consistent with previous studies (Arouri et al., 2014; Turki & Ben Sedrine, 2012; Griffith et al., 2002).

With regard to ownership structure, the results indicate a positive and significant effect at a significance level of 10% between (FAMOWN) and the firm's value (as measured by the Q ratio and MB). Therefore, H3 is supported. This result is consistent with previous studies (Bataineh et al., 2019; Al-Nsour, 2019; Al-Saidi & Al-Shammari, 2015; Arouri

Table 6: Multiple Regression Models Results

	Model 1: Tobin's Q		Model 2: MB		
	Independent Variables	Coefficient	t-statistic	Coefficient	t-statistic
Adjusted R Square		0.268		0.155	
F		3.321		2.161	
Sig.		0.000		0.000	
(Constant)	3.571	2.581**	-8.969	-1.848*	
BSIZE	-0.639	-1.299	1.839	1.066	
CEODU	-0.065	-0.234	-0.054	-0.054	
FAMOWN	0.981	1.976*	3.461	1.986*	
FOROWN	1.264	2.229**	4.598	2.455**	
INSOWN	1.142	1.831*	3.968	1.815*	
GOVOWN	1.667	1.554	-1.200	-0.319	
FSIZE	-0.102	-1.845*	-0.150	-0.779	
GROW	-0.036	-0.338	-1.050	-0.280	
LEV	-0.446	-0.500	1.679	0.537	

***Significant at the 0.01, 0.05, and 0.1 levels, respectively.

et al., 2014; Anderson & Reeb, 2004), suggesting that family ownership plays a practical monitoring function due to their increased stake and influence, which leads to better performance and maximization of firm value. And it differs from the results of the study of Venusita and Agustia (2021), which showed that there is no difference in the value of the family business that is led by family members and the value of the family business that non-family members run.

In addition, the results show a positive and significant effect at a 5% significance level between (FOROWN) and firm value (as measured by Q ratio and MB). This finding confirms that foreign investors are considered better monitoring mechanisms to help reduce agency costs and increase firm value. Therefore, H4 is supported. This result is consistent with previous studies (Kao et al., 2018; Mardny et al., 2018; Marashdeh, 2014; Arouri et al., 2014; Mollah et al., 2012; Omran et al., 2008).

Furthermore, the results show a significant positive effect at a 10% significance level between (INSOWN) and firm value (as measured by Q ratio and MB). This result is consistent with “The efficient monitoring hypothesis” and in contrast with “The conflict-of-interest hypothesis” and “The strategic alignment hypothesis,” suggesting that institutional ownership have the required tools to monitor the board of directors efficiently and to reduce the agency costs, and therefore, increase firm value. Thus, H5 is supported. This result is consistent with previous studies (Queiri et al., 2021; Bataineh et al., 2019; Kao et al., 2018; Arouri et al., 2014; Alipour, 2013; Mollah et al., 2012; Al-Najjar, 2010; Omran et al., 2008; Young et al., 2008).

However, the current study does not provide evidence that the (GOVOWN) has a significant effect on a firm’s value (as measured by Q ratio and MB) at any level of significance. This might be due to political interference, the presence of interest conflict because the government becomes an owner and regulator, and the lack of adequate incentives by the government to monitor and influence management. Therefore, H6 is not supported. This result is consistent with previous studies (Darko et al., 2016; Arouri et al., 2014; Marashdeh, 2014; Shleifer & Vishny, 1997).

In terms of control variables, the results indicate a significant and negative effect at a significance level of 10% between (FSIZE) and the firm’s value as measured by (Q ratio) and insignificant with (MB). However, neither (GROW) nor (LEV) significantly affects a firm’s value in both models.

5. Conclusion

This study aims to examine the effect of board composition and ownership structure on a firm’s value in Jordanian firms. In particular, it aims to determine the effect of board size and chief executive officer (CEO) duality, and family, foreign, institutional, and government ownership

on a firm’s value as measured by Tobin’s Q (Q ratio) and market to book ratio for Jordanian industrial firms listed on Amman Stock Exchange (ASE) for a period of five years from 2016-2020. The study found that board size (BSIZE) has an insignificant impact on firm value. CEO duality (CEODU) does not affect firm value. These results suggest that board size (BSIZE) and chief executive officer (CEO) duality (CEODU) is an irrelevant drivers in determining the firm’s value in Jordan. The study also found that firm value is positively related to family ownership (FAMOWN), foreign ownership (FOROWN), and institutional ownership (INSOWN). However, government (state) ownership (GOVOWN) does not significantly influence firm value.

In light of these results, the researchers recommend the concerned authorities take the necessary measures to ensure the continuity and growth of family businesses because of their positive impact on the value of the company and, thus, on economic growth. As well as encouraging foreign investment by reducing the interest rate, easing restrictions related to foreign ownership and its percentage, or increasing marketing programs to attract more foreign investments from Arab countries and other countries. The study also recommends the need to monitor the level of companies’ commitment to the principles of corporate governance in Jordan because the commitment of these companies to the principles of corporate governance is positively reflected on all relevant parties and avoids negative effects, and this is reflected in the value the company later. In addition, we recommend spreading awareness on how governance protects investors’ interests to encourage investors to buy shares of companies where the percentage of institutional ownership is high. The study also recommends conducting future studies that deal with sectors or variables other than those addressed in the current study and their impact on the company’s value.

References

- Abu-Serdaneh, J., Zuriekat, M., & Al-Sheikh (2010). Ownership structure and corporate performance in the Jordanian manufacturing companies. *Jordan Journal of Business Administration*, 6(3), 426–440.
- Alabdullah, T. T. Y. (2018). The relationship between ownership structure and firm financial performance: Evidence from Jordan. *Benchmarking*, 25(1), 319–333. <https://doi.org/10.1108/BIJ-04-2016-0051>
- Alipour, M. (2013). An investigation of the association between ownership structure and corporate performance: Empirical evidence from Tehran Stock Exchange (TSE). *Management Research Review*, 36(11), 1137–1166. <https://doi.org/10.1108/MRR-08-2012-0188>
- Al-Khoury, R. (2005). Corporate governance and firms value in emerging markets: The case of Jordan. *Corporate Governance*, 11, 31–50. [https://doi.org/10.1016/S1569-3732\(04\)11002-5](https://doi.org/10.1016/S1569-3732(04)11002-5)

- Al-Najjar, B., & Taylor, P. (2008). The relationship between capital structure and ownership structure: New evidence from Jordanian panel data. *Managerial Finance*, 34(12), 919–933. <https://doi.org/10.1108/03074350810915851>
- Al-Najjar, B. (2010). Corporate governance and institutional ownership: Evidence from Jordan. *Corporate Governance, Corporate Governance*, 10(2), 176–190. <https://doi.org/10.1108/14720701011035693>
- Al-Nsour, O. J. (2019). Earning management, institutional ownership, and performance: Evidence from Amman stock exchange. *Journal of Financial, Accounting and Managerial Studies*, 6(2), 162–186. <https://doi.org/10.35392/1772-006-002-005>
- Al-Nsour, O., & Al Hiyari, R. (2020). *Relationship between ownership structure and firm's performance*, *Journal of Economic & Financial Research*, 7(1), 380–406.
- Al-Nsour, O., & Al-Muhtadi, A. (2019). Capital structure, profitability and firm's value: Evidence from Jordan. *Research Journal of Finance and Accounting*, 10(20), 73–80.
- Alodat, A. Y., Salleh, Z., Hashim, H. A., & Sulong, F. (2022). Corporate governance and firm performance: Empirical evidence from Jordan. *Journal of Financial Reporting and Accounting*, 20(5), 866–896. <https://doi.org/10.1108/JFRA-12-2020-0361>
- Al-Saidi, M., & Al-Shammari, B. (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-Saidi, M. (2013). Ownership concentration and firm performance: The case of Kuwait. *Jordan Journal of Business Administration*, 9(4), 803–820. <https://doi.org/10.12816/0002094>
- Alwshah, K. (2009). *The impact of corporate governance and ownership structure on performance and financial decisions of firms: Evidence from Jordan*. UK: The University of Hull.
- Anderson, R. C., & Reeb, D. M. (2004). Board composition: Balancing family influence in S&P 500 firms. *Administrative Science Quarterly*, 49(2), 209–237. <https://doi.org/10.2307/4131472>
- Anum, N. A., & Ghazali, M. (2020). Governance and ownership in Malaysia: Their impacts on corporate performance. *Asian Journal of Accounting Research*, 5(2), 285–298. <https://doi.org/10.1108/AJAR-03-2020-0017>
- Arouri, H., Hossain, M., & Badrul Muttakin, M. (2014). Effects of the board and ownership structure on corporate performance: Evidence from GCC countries. *Journal of Accounting in Emerging Economies*, 4(1), 117–130. <https://doi.org/10.1108/JAEE-02-2012-0007>
- Association of Banks in Jordan. (2022). Analytical study of the performance and trends of the industrial sector. https://abj.org.jo/ebv4.0/root_storage/ar/eb_list_page/.pdf
- Bartholomeusz, S., & Tanewski, G. A. (2006). The relation between family firms and corporate governance. *Journal of Small Business Management*, 44(2), 245–267. <https://doi.org/10.1111/j.1540-627X.2006.00166.x>
- Bataineh, H., Abed, S., & Suwaidan, M. (2019). The impact of ownership structure and corporate governance on the financial performance of Jordanian listed companies. *Jordan Journal of Business Administration*, 15(1), 95–120.
- Bozec, R. (2005). Boards of Directors, market discipline, and firm performance. *Journal of Business Finance and Accounting*, 32(9–10), 1921–1960. <https://doi.org/10.1111/j.0306-686X.2005.00652.x>
- Bravo, F., Reguera-Alvarado, N., & del Pilar Pérez, M. (2018). The role of directors: Unravelling the effects of boards on corporate outcomes. *International Journal of Managerial Finance*, 14(4), 399–413. <https://doi.org/10.1108/IJMF-09-2017-0200>
- Chhibber, P., & Majumdar, S. (1998). State as investor and state as owner: Consequences for firm performance in India. *Economic Development and Cultural Change*, 46(3), 561–580. <https://doi.org/10.1086/452358>
- Darko, J., Aribi, Z. A., & Uzonwanne, G. C. (2016). Corporate governance: The impact of director and board structure, ownership structure, and corporate control on the performance of listed companies on the Ghana stock exchange. *Corporate Governance*, 16(2), 259–277. <https://doi.org/10.1108/CG-11-2014-0133>
- Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management Review*, 22(1), 20–47. <https://doi.org/10.2307/259223>
- Ehikioya, B. I. (2009). Corporate governance structure and firm performance in developing economies: Evidence from Nigeria. *Corporate Governance, Corporate Governance*, 9(3), 231–243. <https://doi.org/10.1108/14720700910964307>
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics*, 26(2), 301–325. <https://doi.org/10.1086/467037>
- Gaur, S. S., Bathula, H., & Singh, D. (2015). Ownership concentration, board characteristics and firm performance: A contingency framework. *Management Decision*, 53(5), 911–931. <https://doi.org/10.1108/MD-08-2014-0519>
- Ghosh, S. (2007). Board diligence, director busyness, and corporate governance: An empirical analysis for India. *Review of Applied Economics*, 3(1–2), 91–104.
- Griffith, J. M., Fogelberg, L., & Weeks, H. S. (2002). CEO ownership, corporate control, and bank performance. *Journal of Economics and Finance*, 26(2), 170–183. <https://doi.org/10.1007/BF02755984>
- Gujarati, D. (2004). *Basic econometrics* (4th ed). NY: McGraw-Hill.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: A global perspective* (7th ed). London: Pearson.
- Jensen, M. C. (1993). The modern Industrial Revolution, exit, and the failure of internal control systems. *Journal of Finance*,

- 48(3), 831–880. <https://doi.org/10.1111/j.1540-6261.1993.tb04022.x>
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs, and capital structure. *Journal of Financial Economics*, 3(4), 305–360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Joh, S. W. (2003). Corporate governance and firm profitability: Evidence from Korea before the economic crisis. *Journal of Financial Economics*, 68(2), 287–322. [https://doi.org/10.1016/S0304-405X\(03\)00068-0](https://doi.org/10.1016/S0304-405X(03)00068-0)
- Kao, M., Hodgkinson, L., & Jaafar, A. (2019). Ownership structure, board of directors and firm performance: Evidence from Taiwan. *Corporate Governance*, 19(1), 189–216. <http://doi.org/10.1108/CG-04-2018-0144>
- Lappalainen, J., & Niskanen, M. (2012). Financial performance of SMEs: Impact of ownership structure and board composition. *Management Research Review*, 35(11), 1088–1108. <https://doi.org/10.1108/01409171211276954>
- Lipton, M., & Lorsch, J. W. (1992). *A modest proposal for improved corporate governance*. NJ: Sage
- Marashdeh, Z. (2014). *The effect of corporate governance on firm performance in Jordan*. UK: The University of Central Lancashire.
- Mardnly, Z., Mouselli, S., & Abdulraouf, R. (2018). Corporate governance and firm performance: An empirical evidence from Syria. *International Journal of Islamic and Middle Eastern Finance and Management*, 11(4), 591–607. <https://doi.org/10.1108/IMEFM-05-2017-0107>
- Mishra, R. K., & Kapil, S. (2018). Effect of board characteristics on firm value: Evidence from India. *South Asian Journal of Business Studies*, 7(1), 41–72. <https://doi.org/10.1108/SAJBS-08-2016-0073>
- Mollah, S., Al Farooque, O., & Karim, W. (2012). Ownership structure, corporate governance and firm performance: Evidence from an emerging African market. *Studies in Economics and Finance*, 29(4), 301–319. <https://doi.org/10.1108/10867371211266937>
- Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, 5(2), 147–175. [https://doi.org/10.1016/0304-405X\(77\)90015-0](https://doi.org/10.1016/0304-405X(77)90015-0)
- Nas, I. T., & Kalaycioglu, O. (2016). The effects of the board composition, board size and CEO duality on export performance: Evidence from Turkey. *Management Research Review*, 39(11), 1374–1409. <https://doi.org/10.1108/MRR-01-2015-0014>
- Organization for Economic Co-operation and Development (OECD). (2004). OECD principles of corporate governance. <http://www.oecd.org/dataoecd/32/18/31557724.pdf>
- Omran, M. M., Bolbol, A., & Fatheldin, A. (2008). Corporate governance and firm performance in Arab equity markets: Does ownership concentration matter? *International Review of Law and Economics*, 28(1), 32–45. <https://doi.org/10.1016/j.irle.2007.12.001>
- Palaniappan, G. (2017). Determinants of corporate financial performance relating to board characteristics of corporate governance in Indian manufacturing industry: An empirical study. *European Journal of Management and Business Economics*, 26(1), 67–85. <https://doi.org/10.1108/EJMBE-07-2017-005>
- Pearce, J. A., & Zahra, S. A. (1992). Board composition from a strategic contingency perspective. *Journal of Management Studies*, 29(4), 411–438. <https://doi.org/10.1111/j.1467-6486.1992.tb00672.x>
- La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (1999). Corporate ownership around the world. *Journal of Finance*, 54(2), 471–517. <https://doi.org/10.1111/0022-1082.00115>
- Pound, J. (1988). Proxy contests and efficiency of shareholder oversight. *Journal of Financial Economics*, 20(1/2), 237–265. [https://doi.org/10.1016/0304-405X\(88\)90046-3](https://doi.org/10.1016/0304-405X(88)90046-3)
- Queiri, A., Madbouly, A., Reyad, S., & Dwaikat, N. (2021). Corporate governance, ownership structure and firms' financial performance: Insights from Muscat securities market (MSM30). *Journal of Financial Reporting and Accounting*, 19(4), 640–665. <https://doi.org/10.1108/JFRA-05-2020-0130>
- Raheja, C. G. (2005). Determinants of board size and composition: A theory of corporate boards. *Journal of Financial and Quantitative Analysis*, 40(2), 283–306. <https://doi.org/10.1017/S0022109000002313>
- Ross, S. A., Westerfield, R. W., & Jaffe, J. (2002). *Corporate finance* (6th ed). NY: McGraw-Hill.
- Saidat, Z., Silva, M., & Seaman, C. (2019). The relationship between corporate governance and financial performance: Evidence from Jordanian family and non-family firms. *Journal of Family Business Management*, 9(1), 54–78. <https://doi.org/10.1108/JFBM-11-2017-0036>
- Salem, W., Metawe, S., Youssef, A., & Mohamed, M. (2019). Boards of directors characteristics and firm value: A comparative study between Egypt and USA. *Open Access Library Journal*, 6, 1–33. <https://doi.org/10.4236/oalib.1105323>
- Setiawan, D., Bandi, B., & Phua, L. (2016). Ownership structure and dividends policy in Indonesia. *Journal of Asia Business Studies*, 10(3), 230–252.
- Shahwan, T. M. (2015). The effects of corporate governance on financial performance and financial distress: Evidence from Egypt. *Corporate Governance*, 15(5), 641–662. <https://doi.org/10.1108/CG-11-2014-0140>
- Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *Journal of Finance*, 52(2), 737–783. <https://doi.org/10.1111/j.1540-6261.1997.tb04820.x>
- Sheikh, M. F., Bhutta, A. I., & Sultan, J. (2019). CEO compensation and unobserved firm performance in Pakistan. *Journal of Asian Finance, Economics, and Business*, 6(3), 305–313. <https://doi.org/10.13106/JAFEB.2019.VOL6.NO3.305>
- Siahaan, F. (2013). The effect of good corporate governance mechanism, leverage, and firm size on firm value. *GSTF Journal on Business Review*, 2(4), 137–142.

- Sudiyatno, B., Puspitasari, E., Suwarti, T., & Asyif, M. M. (2020). Determinants of firm value and profitability: Evidence from Indonesia. *Journal of Asian Finance, Economics, and Business*, 7(11), 769–778. <https://doi.org/10.13106/JAFEB.2020.VOL7.NO11.769>
- Thompson, S., Dogarawa, A. B., Bello, A., & Fodio, M. I. (2016). Board characteristics, ownership structure, and firm value of listed petroleum companies in Nigeria. *SSRN Electronic Journal*, 12(2), 59–108. <https://doi.org/10.2139/ssrn.3308005>
- Turki, A., & Ben Sedrine, N. B. (2012). Ownership structure, board characteristics and corporate performance in Tunisia. *International Journal of Business and Management*, 7(4), 121–132. <https://doi.org/10.5539/ijbm.v7n4p121>
- Venusita, L., & Agustia, D. (2021). The relationship between firm value and ownership of family firms: A case study in Indonesia. *Journal of Asian Finance, Economics, and Business*, 8(4), 863–873. <https://doi.org/10.13106/JAFEB.2021.VOL8.NO4.0863>
- Xu, X., & Wang, Y. (1999). Ownership structure and corporate governance in Chinese stock companies. *China Economic Review*, 10(1), 75–98. [https://doi.org/10.1016/S1043-951X\(99\)00006-1](https://doi.org/10.1016/S1043-951X(99)00006-1)
- Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, 40(2), 185–211. [https://doi.org/10.1016/0304-405X\(95\)00844-5](https://doi.org/10.1016/0304-405X(95)00844-5)
- Young, M. N., Peng, M. W., Ahlstrom, D., Bruton, G. D., & Jiang, Y. (2008). Corporate governance in emerging economies: A review of the principal–principal perspective. *Journal of Management Studies*, 45(1), 196–220. <https://doi.org/10.1111/j.1467-6486.2007.00752.x>
- Zedan, H. I., & Abu Nassar, M. (2014). The effect of corporate governance on the operating performance of Jordanian manufacturing companies: Evidence from Amman stock exchange. *Dirasat: Administrative Sciences*, 41(2), 465–481. <https://doi.org/10.12816/0007483>
- Zeitun, R., & Tian, G. (2007). Does ownership affect a firm's performance and default risk in Jordan? *Corporate Governance*, 7(1), 66–82. <https://doi.org/10.1108/14720700710727122>