THE IMPACT OF THE BOARD OF DIRECTORS ON COMPANIES' PERFORMANCE: THE MODERATING ROLE OF OWNERSHIP CONCENTRATION

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Abstract

The impact of the board of directors (BOD) on the performance of companies, particularly considering the moderating role of ownership concentration (OC), is a topic of significant importance in the realm of corporate governance (Habtoor, 2020). The study employs structural equation modelling (SEM), a more advanced method, to address causality and endogeneity issues in governance-performance relationships (Hamid & Purbawangsa, 2022). The hypotheses are constructed based on resource dependence and agency theories, enhancing the theoretical framework. The research focuses on Jordanian service and industrial firms listed on the Amman Stock Exchange (ASE) from 2014 to 2018, encompassing 92 firms and 460 observations. Based on the estimated results, the study confirms that the size of the board, CEO duality, and board independence, including OC, all have a positive effect on firm performance. The results also show that the BOD has a statistically significant impact on firm performance when considering the moderating impact of OC. However, the study finds that CEO duality and board independence have an insignificant impact on return on assets (ROA). This study contributes to the literature on BOD and firm performance and provides insights for practitioners and policymakers.

Keywords: Ownership Concentration, Board of Directors, Firm Performance

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1. INTRODUCTION

Corporate governance (CG) has become essential in today's business landscape because it promotes transparency, accountability, ethical behaviour, and long-term sustainability. This aligns with broader global efforts to achieve the Sustainable Development Goals (Naciti, 2019). In the context of Jordanian companies, CG and the functions performed by the board of directors (BOD) are indeed crucial and

irreplaceable. They contribute significantly to various aspects of the country's economy and business environment, including boosting stakeholder confidence, attracting foreign investments, ensuring regulatory compliance, facilitating access to capital markets, and enhancing global competitiveness. To improve the performance of Jordanian companies and their ability to compete globally, adopting strong governance practices and ensuring the effectiveness of the BOD is essential (Kanakriyah, 2021).

Investigating the impact of the BOD on company performance in the context of Jordan, especially with a focus on OC, is crucial due to the need for context-specific insights, the potential policy implications, and the significance for investors and academics (Freihat et al., 2019). This research aims to fill a critical void in the literature and address the specific challenges and opportunities faced by Jordanian companies and their BOD.

Whilst literature on CG continues to grow, the empirical evidence providing insights into the relationship between BOD and firm performance remains mixed and has yielded inconclusive results (Kyere & Ausloos, 2021, for the U.K.; Gaur et al., 2015, for New Zealand). Specifically, due to the divergent results reported in the literature, it becomes difficult to understand the effect of BOD on firm performance. Moreover, prior studies like those reported by Kyere and Ausloos (2021) and Gaur et al. (2015), that have investigated this relationship, have excessively focused on developed economies making it difficult to generalize the relationship between BOD and firm performance.

More interestingly, limited work has been conducted on the impact of BOD on firm performance, especially in a Jordanian context. Jordanian CG differs from that of most developed economies. In Jordan, ownership is extremely concentrated, businesses are built on relationships and trust, and the Jordanian government remains a significant shareholder (Altawalbeh, 2020). It is risky to readily translate perceived best practices from most developed economies into such a transitioning economy.

Conversely, in most developed economies like the US and UK, agency conflicts between the principal and the agent exist. In Jordan, controlling shareholders can have a significant influence on the direction of a company, resulting in conflicts with minority shareholders. Surprisingly, very few researchers have investigated the general effects of BOD on firm performance in a unique setting like Jordan. Previous empirical evidence, such as that reported by Freihat et al. (2019) and Kanakriyah (2021) has examined the direct impact of the BOD on firm performance without taking contingent factors into account.

According to Baron and Kenny (1986), when a connection between a dependent and independent variable is discovered to be widely contradictory in the literature, the indirect effects of a moderator variable may explain this inconsistency. Some researchers (Puni & Anlesinya, 2019; Mubeen et al., 2020) have advocated for future research to consider the effect of contextual factors on the relationships between BOD and firm performance. As confirmed by Kostyuk et al. (2018), there is a need to explore alternatives that can offer more precise and efficient research approaches and metrics, enabling deeper insights into CG research. However, only a very small number of studies in Jordan, such as those reported by Makhlouf et al. (2018) and Mansour et al. (2022), have complied with this call.

In this regard, examining the direct effects of BOD on firm performance without taking into account contingent factors, such as OC, can be misleading. Particularly in Jordan, where ownership plays a crucial role, it becomes extremely important to consider the interactive effect of OC on the relationship between BOD and firm performance. This has remained elusive until now. Consequently, inconsistent findings from research may be a product of these gaps, to some extent, due to the ever-evolving business and economic environment. Up until now, this aspect remains unexplored.

Furthermore, the discrepancies in findings and conclusions among various studies can be attributed to differences in methodology, the choice of variables, performance measures employed, and the time frames during which these studies were conducted. Many of these studies have grappled with endogeneity issues, which have often led to misleading findings (Iwasaki & Mizobata, 2020). This research aims to bridge this gap by employing a robust method of structural equation modelling (SEM) to address endogeneity concerns such as simultaneity, unobserved variable bias, and autoregressive effects. By utilizing SEM, this study can effectively control for these endogeneity challenges, yielding more reliable and valid estimates of the relationship between CG and firm performance (Hamid & Purbawangsa, 2022).

The current study aims to examine the relationship between BOD (board size, CEO duality, and board independence) and firm performance in non-financial Jordanian companies. In addition to the possible direct correlation between OC on performance in Jordanian companies, this research assumes an indirect impact of OC on this relationship by moderating the association between BOD and the performance of Jordanian firms. By integrating agency theory (Jensen & Meckling, 1976) and resource dependence theory (Pfeffer & Salancik, 2003), this study enhances our understanding of this relationship.

Previous studies by Saidat et al. (2019), Freihat et al. (2019), and Kanakriyah (2021) have already explored this topic in the context of Jordanian companies. However, the current study goes beyond their work by investigating additional factors that may moderate the relationship between the BOD and firm performance. Specifically, the study seeks to identify and examine contingency factors that could affect the strength or direction of the relationship between these BOD and performance outcomes in Jordanian companies. By doing so, the paper aims to contribute new insights and knowledge to the literature on CG and firm performance in emerging markets while offering insights specific to Jordan.

To the best of our knowledge, no integrative study in Jordanian companies has been conducted to date that investigates the moderating effect of

OC on the relationship between BOD and firm performance. This study is the first to demonstrate that OC can serve as an alternative monitoring proxy in a weak regulatory environment like Jordan. Therefore, by focusing on resource dependence theory and agency theory, this paper contributes to CG literature and complements the findings of Freihat et al. (2019) and Alkurdi et al. (2021) by substantiating their position that OC can serve as an alternative monitoring mechanism.

Finally, the study has practical implications for policymakers, regulators, and practitioners. It highlights the importance of the BOD in enhancing firm performance and the need for policies and regulations that promote good CG practices. It also suggests that OC can have a moderating effect on the relationship between the BOD and firm performance, which should be considered when designing the BOD practices and policies.

The structure of this paper is organized as follows. Section 2 reviews the relevant literature. Section 3 delves into the methodology employed for conducting empirical research, providing insights into data and research methods. Following this, Section 4 presents and discusses the empirical findings. Lastly, Section 5 encompasses the conclusion, limitations, and a discussion on avenues for future research.

2. LITERATURE REVIEW

2.1. Board size

The board size is a vital feature of a board, serving as the cornerstone and a crucial aspect in ensuring the success of a corporation in forming an effective CG structure (Ali et al., 2022; Haroon & Zaka, 2023; Waheed & Malik, 2019; Kostyuk, 2005). It is also described as the count of board members of the BOD positioned within it to observe the upper management and safeguard the interests of each and every stakeholder (Kyere & Ausloos, 2021). In agency problems, theoretically, the governing body is responsible for supervising, directing, advising, and holding the management accountable (Jensen & Meckling, 1976). It also demonstrates that a board with a smaller number of directors is better equipped to oversee the firm's executive management. This is because having a few directors engaging in management tasks makes the board more vigilant, which helps strengthen the decision-making process (Singh et al., 2018).

Additionally, the resource dependence theory charges the company's governing body with the responsibility of increasing its resource pool while simultaneously reducing its risk (Pfeffer & Salancik, 2003). Moreover, larger boards would lower risk since there would be a higher availability of individuals with a variety of experience and resources, each of which may assist the company in enhancing its management abilities. Thus, a larger board with greater resources can better monitor risk, which affects each and every stakeholder. In addition, they are able to provide the management with alternative risk-reduction measures, as well as suggestions and advice, thereby contributing to improved firm performance (Waheed & Malik, 2021; Kostyuk et al., 2006).

Accordingly, evidence from developed and developing markets reports a positive influence regarding board size on firm performance. For instance, this can be seen in studies by Gaur et al. (2015) for New Zealand, Ciftci et al. (2019) for Turkey, Puni and Anlesinya (2019) for Ghana, Kanakriyah (2021) for Jordan, Bansal and Singh (2021), Neralla (2022) for India, and Ali et al. (2022) for Pakistan. The evidence from both developed and developing markets consistently suggests that larger board sizes positively impact firm performance. This may be attributed to a diverse set of skills, experiences, and perspectives that larger boards bring, which can lead to better decision-making and strategic planning, ultimately benefiting the company's performance.

Nevertheless, the results of several empirical investigations suggest a negative correlation with firm performance due to its potential to reduce board members' cohesiveness and agreement when making resolutions. With a larger number of members, decision-making becomes more complex, communication may suffer, and consensus-building becomes harder, potentially hindering effective governance and strategic decision-making. These studies include Malik and Makhdoom (2016) for Global 500 Companies; Kao et al. (2019) for Taiwan; and Peng et al. (2021) for China.

Given that certain theories propose that board size can have either a negative or positive impact on performance, there is ongoing debate in the literature regarding the influence of board size. Building upon the previous discussion of findings, this study formulates the following hypothesis:

H1: Board size has positive effects on firm performance.

2.2. Board independence

The independence of the board is at the heart of many CG reforms. The term "independent" refers to a director who is free from conflicts of interest and separate from the management (Sewpersadh, 2022). The Cadbury Report (Cadbury, 1993) initiated a debate on the importance of independent directors and their key responsibilities. Moreover, the Sarbanes–Oxley Act (SOX) of 2002 mandates that every listed firm must have independent directors. Consequently, on January 1, 2009, the Jordan Securities Commotion issued the first Jordanian Corporate Governance Code (JCGC), which was listed on the Amman Stock Exchange (ASE). Additionally, it was recommended that the board should consist of at least one-third independent members.

Furthermore, agency theory states that independent directors can minimize agency costs by overseeing and regulating management decision-making (Fama & Jensen, 1983). Moreover, resource dependence theory acknowledges that directors can serve as valuable strategic resources (Pfeffer & Salancik, 2003). Additionally, a board with more diverse directors could possess better expertise in running the firm, leading to improved firm performance (Sewpersadh, 2022).

The results of several empirical investigations suggest a positive correlation between board independence and firm performance. This is evident from the following studies: Malik and Makhdoom (2016) (Global 500 Companies); Kao et al. (2019) (Taiwan); Kanakriyah (2021) (Jordan); Kyere and Ausloos (2021) (U.K.); Ali et al. (2022) (Pakistan); and Neralla (2022) (India). The empirical evidence suggests that fostering board independence can be a valuable strategy for companies seeking to improve their financial performance and enhance CG practices.

On the contrary, several empirical studies find a negative relationship. This can be seen in Waheed and Malik (2019) for Pakistan, Altawalbeh (2020) for Jordan, and Bansal and Singh (2021) for India. The study found that having independent board members was linked to lower firm performance, suggesting that their presence did not guarantee improved performance. Despite the increasing attention from practitioners, regulatory organizations, as well as academics, empirical research has not yet produced definitive proof regarding the influence of independent directors. However, considering the above discussion of prior findings, the hypothesis below will be examined in this investigation:

H2: Board independence has positive effects on firm performance.

2.3. CEO duality

The CEO's functions and the chairman of the BOD roles combined are among the most contentious issues in CG (Goergen et al., 2020). The situation in which the CEO simultaneously acts as the chairman of the BOD can be named "CEO duality" (Shahab et al., 2022). According to Jensen (1993), CEO duality is associated with agency issues because of the concentration of authority on the one hand, creating information asymmetry between board members and the CEO.

However, data indicates that a CEO holding two positions may have attitudes that do not align with the best interests of the company's shareholders. Instead, they may make decisions to maximize their perks and benefits for reasons such as personal gain, the cost of replacing the CEO, or any additional expenses related to the CEO at the expense of the companies. This eventually leads to agency conflict (Mubeen et al., 2020). Accordingly, the Jordan Securities Commission (2017) issued a statement that it is not permissible to combine the two positions with any other position in the company. Furthermore, none of the relatives of the chairman of BOD may hold the position of general manager of the company.

In accordance with resource dependence theory, resource provision, rather than monitoring, elucidates the dynamics between the CEO and the BOD. Consequently, the primary function of the board is to use a more effective lens for understanding boards. There are indications that CEO duality possesses a positive effect. For instance, can see this from Goergen et al. (2020) for S&P 500 firms in the U.S., Nguyen et al. (2018) for Australia, and Kanakriyah (2021) for Jordan. It fosters a heightened sense of responsibility for the company and boosts motivation to improve its performance. This consolidated leadership structure can streamline decision-making and align the CEO's vision with the board's objectives, potentially resulting in more effective and focused corporate leadership.

In contrast to this view, a negative effect can also be seen in Kao et al. (2019) for Taiwan, Mubeen et al. (2020), Peng et al. (2021) for China, Bansal and Singh (2021), and Neralla (2022) for India. In addition, agency theorists highlight the detrimental relationship between CEO duality and company performance, contending that it may endow CEOs with excessive authority and undermine the effectiveness of the board's governance.

However, from an empirical perspective, it has not been definitively proven whether having a dual role as CEO either helps or hurts the success of the company. According to these arguments, the relationship can either be positive or negative. Based on the previous research results discussed, this study will examine the following hypothesis:

H3: CEO duality has positive effects on firm performance.

2.4. Ownership concentration

The OC refers to the extent to which a company's ownership is concentrated in the hands of a small number of larger shareholders. These larger shareholders, often holding more than 5% of the company's stock, can have a significant influence on the company's operations and policies. OC is considered one of the key factors that can impact a firm's performance (Hyarat et al., 2023).

In their key works, Berle and Means (1932) as well as Jensen and Meckling, (1976), argue that because ownership is widely dispersed, ordinary shareholders are unable to oversee managers effectively. As a consequence, corporate managers may engage in behaviors such as shirking (not putting in maximum effort) and seeking personal benefits or perquisites (perks) at the expense of shareholders. As a result, high OC enhances monitoring, reduces conflict of interests between shareholders and managers, and improves firm performance (Nashier & Gupta, 2020).

According to agency theorists, major shareholders have a significant financial incentive to actively monitor their investments and use their voting power to influence strategic decisions. This helps prevent managerial misconduct and reduces information asymmetry (Sewpersadh, 2022; Jensen et al., 1976). Additionally, OC serves as a governance strategy that prevents firm management from deviating from the interests of shareholders (Puni & Anlesinya, 2020). As a result, large owners exercise greater scrutiny over management compared to smaller stockholders.

In contrast, OC may result in additional expenditures. One further type of agency cost, resulting from conflicting interests between small and large stockholders, is discussed by Shleifer and Vishny (1997). In this scenario, large owners can benefit themselves at the expense of smaller shareholders through actions such as granting special dividends, leveraging their access to confidential information, employing transfer pricing

tactics with related firms, and capitalizing on their business relationships with companies under their control (Fama & Jensen, 1983; Habtoor, 2020; Shleifer & Vishny, 1997).

Can be observed that OC has a negative correlation with company performance, as demonstrated by various studies: Wang and Shailer (2015) for 18 emerging markets; Pandey and Sahu (2021) for India, Habtoor (2020) for Saudi Arabia, and Zraiq and Fadzil (2018) for Jordan. On the contrary, the opposing school of thought contends that large shareholders might improve a company's performance. This perspective is supported by studies conducted in various regions, including those by Kao et al. (2019) for Taiwan, Puni and Anlesinya (2019) for Ghana, Nashier and Gupta (2020) for India, Alkurdi et al. (2021) for Jordan, Iwasaki and Mizobata (2020) for Central and Eastern Europe, as well as the ex-USSR, Peng et al. (2021) for China, and Sewpersadh (2022) for South Africa.

According to this strand of research, it agrees that companies focusing on big shareholders can enhance corporate image, bring in more resources, and improve firm performance. This might be justified by agency theory that when a firm has a higher OC, it may lead to better decision-making, accountability, or alignment of interests among the owners and management, which could, in turn, positively impact firm performance. According to the above arguments and within the context of Jordanian, the study proposes the following hypotheses:

H4: Higher OC is positively correlated with the performance of Jordanian firms.

2.5. The role of the moderating impact of ownership concentration

The nature of agency conflicts differs depending on the level of ownership and the type of firm shareholders, thereby influencing the decision-making process of the board. When there is a dispersion of company ownership (referred to as type I), a division arises between ownership and management, resulting in conventional conflicts between shareholders (considered outsiders) and management (considered insiders) (Jensen & Meckling, 1976). This typically arises in companies with distributed shareholding, as shareholders assert themselves over the top management team or as members of the executive board (Alkurdi et al., 2021).

Nonetheless, it is common for companies with a significant concentration of ownership to experience an indirect type of influence (known as type II). This influence occurs between the minority shareholders (those without control) and the majority shareholders (those with control) (Shleifer & Vishny, 1997). Concentrated shareholders exert influence on the systems of CG in an effort to advance their interests at the expense of minority shareholders. Thus, board members, independent directors, and the CEO become key figures in the firms and control the firm's performance (Habtoor, 2020). This problem is particularly prevalent in emerging markets (Pandey & Sahu, 2021).

Agency theory suggests that firms may face more complicated agency conflicts in a concentrated ownership environment. Closely owned firms, particularly family-owned ones, may experience fewer agency conflicts between managers and shareholders and lower agency expenses (e.g., monitoring and bonding) for both managers and shareholders (Ciftci et al., 2019; Saidat et al., 2019). Conversely, companies of this kind are more prone to be plagued by disagreements between shareholders holding minority and majority stakes. When the ownership percentage of significant shareholders reaches a particular degree, referred to as the occupation problem, minority shareholders have no decision-making authority (Hu et al., 2020). This encourages large owners to maximize their wealth at the expense of smaller shareholders' interests. Additionally, Gaur et al. (2015) discovered that OC might have an indirect effect on a company's performance by influencing BOD to select members who are less likely to monitor in solidifying themselves.

The evidence indicates that controlling shareholders dominate Jordanian BOD, exerting substantial influence overboard composition and showing a propensity to select board members with less independence. Despite the fact that there are members who hold qualifications but are not necessarily qualified, they often choose their relatives, friends, or allies to serve their interests better. This preference comes at the expense of shareholders who own minority shares, as they do not prioritize employment decisions based on competence, qualifications, experience, as well as other performance predictors (Kanakriyah, 2021; Puni & Anlesinya, 2019). Large shareholders are, for all intents and purposes, the owners of a company, and therefore, they have a vested interest in ensuring that the company continues to operate. Contrarily, the goals of minority shareholders are more focused on short-term gains, and they may not seem to have as much concern for the company's long-term existence (Moscariello et al., 2019). Consequently, controlling shareholders prefer weaker CG systems to avoid oversight by minority shareholders, thereby increasing information asymmetry.

The moderating effects of family ownership control on the connection between BOD effectiveness and firm performance were examined in a study by Amrah et al. (2015). Their findings imply that family control improves the profitability of firms in the Sultanate of Oman by positively moderating the relationship between the BOD effectiveness and the cost of debt. In contrast, García-Ramos et al. (2017) examined 221 publicly traded firms in Southern Europe and found that the relationship between board independence and company performance is influenced by controlling shareholders. On the other hand, Singh et al. (2018) investigated the moderating impact of OC on the relationship between CG and organizational performance. Their findings revealed that OC negatively moderates the relationship between CEO duality and board independence on organizational performance in

Pakistan. Meanwhile, Habtoor (2020) explored the potential influence of OC on the link between board composition and performance. According to his research, OC significantly and adversely modifies the relationship between board composition and performance in Saudi Arabia.

The institutional environment of Jordan is distinguished by high OC levels across the majority of the companies listed on the ASE, with controlling shareholders holding the majority of those shares (Saidat et al., 2019; Alhababsah, 2019). Based on agency theory and empirical research, the study hypotheses can be formulated as follows.

H5: Board size has a significant association with firm performance with the moderating influence of OC.

H6: CEO duality has a significant association with firm performance with the moderating influence of OC.

H7: Board independence has a significant association with firm performance with the moderating influence of OC.

3. RESEARCH METHODOLOGY

This research was conducted on two sectors (services and industry) of public firms listed on the ASE. The sample covers a five-year period from 2014 to 2018, comprising a total of 92 companies before the COVID-19 pandemic started in the world. The market downturn brought on by the COVID-19 pandemic may significantly impact firms' performance in the years after 2018. Notably, financial firms, such as banks and insurance companies, were excluded from the study. This exclusion was due to the presence of a regulatory framework established by the Insurance Authority and the Central Bank of Jordan, which has implemented various CG rules, ensuring the reliability and validity of the analysis (Alhababsah, 2019).

Hence, data on companies' performance was acquired from the Thomson Reuters database, which contained financial information. Furthermore, the board's non-financial details such as board size, board independence, and CEO duality were manually collected from the annually published reports accessible on the ASE website. As a result, it was found that all of the variables are readily available to achieve the objectives of the study concerning the BOD.

The industrial and service firms that are part of the study have all of the accounting information that is required to accomplish the goals of the study, relying on the variables that are being investigated. In addition, these companies' shares circulated during the study. Apart from that, no mergers, acquisitions, or bankruptcies occurred during the study. By 2018, 92 companies with 460 observations met the study requirement.

One alternative method to enhance the study's robustness is conducting a longitudinal analysis, extending the timeframe for a more comprehensive understanding of the enduring effects of BOD practices on firm performance. While financial firms were initially excluded due to regulatory frameworks, a comparative analysis could be pursued by incorporating them into a separate examination. Another alternative involves adopting a qualitative approach, such as interviews or case studies, to delve deeper into the mechanisms through which BOD practices shape firm performance. Qualitative data adds context and nuance to quantitative findings, offering a more holistic perspective. By exploring these alternative methods, researchers can exhibit a thorough consideration of diverse approaches, acknowledge potential limitations, and enhance the overall rigor and validity of the study.

3.1. Dependent variables

Greenley (1995) proposed a definition of performance as a reflection of how an organization employs its human and financial resources to realize its objectives, or the firm's capacity to survive while maintaining a balance of satisfaction among its shareholders and employees. This study utilized two different performance variables to explore potential differences in measuring company performance indicators. First, this study used Tobin's Q ratio (Tobin, 1969). Note that Tobin's Q refers to market capitalization plus firm liabilities divided by total assets. Moreover, Tobin's Q can also predict a firm's performance by continuously measuring a corporation's importance (Kyere & Ausloos, 2021). Second, return on assets (ROA) is accounting-based because it measures the firm's asset-based profit. As a result, it manages firm performance through resource allocation. To determine ROA, we divided net income by all assets throughout the reporting period. ROA gauges how effectively a company's management produces profits from its financial assets or resources (Kyere & Ausloos, 2021). Using net income in the ROA calculation provides a more comprehensive and widely accepted measure of a company's profitability and financial performance. It considers all expenses, including interest and taxes, making it a more accurate representation of how effectively a company uses its assets to generate profit. Earnings before interest and taxes (EBIT), while useful in other financial analyses, does not provide the same level of inclusivity and comparability as net income when calculating ROA.

3.2. Measurement of variables

Based on the aims of this research, the *Board size, Board independence,* and *CEO duality* in the study are the model's independent variables, firm performance — *ROA* and *Tobin's Q* — serves as the model's dependent variable, and *OC* is a mediator variable. The following sections indicate the measurement of each variable (Table 1).

Table 1. Variables' definitions and measurements

Variable	*Type of data*	*Type*	*Measures*	*Authors*
ROA	Ratio	DV	Net income / Total assets × 100 = Return on assets	Ali et al. (2022), Hyarat et al. (2023)
Tobin's Q	Ratio	DV	The firm's market value / Asset value	Kyere and Ausloos (2021), Shahab et al. (2022)
Board size	Number (count)	IV	The natural logarithm of the total number of directors on the BOD	Kyere and Ausloos (2021), Waheed and Malik (2021), Khan and Kamal (2022)
Board independence	Number (count)	IV	Percentage of independent directors on the board	Khan and Kamal (2022), Ali et al. (2022), Neralla (2022)
CEO duality	Binary	IV	CEO duality, measured as a function of the board chairperson and CEO, is 1 if the CEO is the chairperson and 0 otherwise	Goergen et al. (2020), Kanakriyah (2021), Peng et al. (2021), Khan and Kamal (2022), Kyere and Ausloos (2021), Shahab et al. (2022)
OC	Ratio	M	The percentage of shares owned by individual or institutional investors who hold more than 5% of the total shares in the company	Altawalbeh (2020), Ciftci et al. (2019), Hyarat et al. (2023)

3.3. Data analysis

The current study used Statistical Package for the Social Sciences (SPSS), as well as Stata 17, which estimates structural models with latent variables using a variance-covariance matrix. The causal modeling procedure offered by SEM is appropriate for testing the hypothesized model, as it considers multiple path coefficients simultaneously, allowing for the analysis of indirect, direct, and spurious relationships among variables. Furthermore, this technique estimates individual weightings of each observed variable within the context of the theoretical model, rather than in isolation.

4. RESULTS AND DISCUSSION

4.1. Descriptive statistics

Data are organized using descriptive statistics to analyze variables within a sample or population. To make inferential statistical comparisons, it is always necessary to complete the calculation of descriptive statistics as a prerequisite. This step is a fundamental component of any research project that involves gathering information. Descriptive statistics encompass central tendency, frequency, dispersion/variation, location, and various types of variables (ordinal, nominal, ratio, and interval). Descriptive statistics simplify the process for decision-makers to evaluate specific groups by condensing data into a more digestible summary. This article focuses on the following primary competencies: financial, economic, management knowledge, development, and practice-based learning (Chaiyachati & Grande, 2018).

Table 2. Estimated results of descriptive statistics

Variable	*Observations*	*Mean*	*Std. Dev.*	*Min*	*Max*
Board size	460	7.863043	2.371018	4	16
Board independence	460	2.876087	2.040941	0	10
CEO duality	460	0.1565217	0.3637448	0	1
ROA	460	0.0186351	0.3265695	-6	2.476601
Tobin's Q	460	1.10882	0.6793369	0.0924994	6.212245
OC	460	0.6304001	0.2400211	0.0564897	0.9946506

4.2. Measurement model assessment

Skewness is a term used in statistics to describe the degree to which the probability distribution with respect to a random variable deviates from its mean. To put it another way, skewness is a measurement that determines how significant and in what way skew is (departure from horizontal symmetry). Skewness may have a positive value, a negative value, or no value. If skewness equals 0, the data is the same on both sides, which is very unlikely for real-world data. The distribution is skewed when skewness is less than -1 or greater than 1. Provided that the skewness is between -1 and -0.5 or between 0.5 and 1, the distribution is said to be very skewed. Moreover, the distribution is about symmetric when the skewness is between -0.5 and 0.5. Kurtosis, however, shows how high and sharp the center peak is compared to a typical bell curve. The kurtosis and skewness values of all variables in the table below are between the absolute value of 2, implying that the data employed in this research is normally distributed. As per West et al. (1995), an absolute skew value > 2 is a criterion for significant deviation from normalcy.

Table 3. Estimated results of the normality test

Variable	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
CEO duality	1.181	0.221	0.398	0.457
OC	0.49	0.241	0.566	0.451
Board size	1.065	0.291	0.176	0.468
Board independence	0.418	0.219	0.044	0.453
ROA	0.158	0.311	-1.123	0.461
Tobin's Q	0.298	0.301	1.172	0.453

The next step of this analysis is multicollinearity, a statistical term for when several different variables in a model are related to each other. For example, when the correlation coefficient between two variables is +/-1, they are said to be completely collinear. When there is multicollinearity among independent variables, it makes it harder to trust statistical conclusions. Note that this study applied a variance-covariance matrix and variance inflation factor (VIF). According to the general rule, the VIF value should be less than 5. The estimated findings have proven that the greatest VIF is 1.09, proving that the study's model is multicollinearity-free.

Table 4. Estimated results of the multicollinearity test

Variable	Board size	Board independence	CEO duality	OC	VIF
Board size	1				1.09
Board independence	0.2761	1			1.09
CEO duality	-0.0105	0.0438	1		1
OC	0.1311	0.0133	0.0484	1	1.01
Mean VIF					**1.05**

4.3. Structural model assessment (discussion)

Based on the pre-diagnostic tests, it has been confirmed that SEM will provide unbiased results. Hence, Table 5 below depicts the estimated results of SEM with the moderating effect of OC. In this table, the first column presents the explanatory variables, while the second column depicts the coefficients, standard error in parentheses, and probability values represented as stars (*). The outcomes for the dependent variable *ROA* are shown in the second column, and the outcomes for the dependent variable *Tobin's Q* are shown in the third column.

The research hypothesized a positive relationship between BOD and the performance of Jordanian firms (*H1*). This hypothesis finds support in our estimates, which reveal a positive and statistically significant effect. *H1* demonstrates that board size is associated with a *ROA* coefficient value of 0.0209 and *Tobin's Q* coefficient value of 0.0107 with a p-value of < 0.01. This evidence suggests that successful companies tend to have a larger number of directors, facilitating the acquisition of more experience and skills by board members. Additionally, this finding supports resource dependence theory also previous research reported by Bansal and Singh (2021), Kanakriyah (2021), Ali et al. (2022), and Neralla (2022).

Regarding *H2*, there is a positive and statistically significant association between the independence of the board and the performance of Jordanian companies. We find a coefficient of 0.00668 with *ROA* and 0.0327 with *Tobin's Q*. According to the findings, boards with a greater percentage of independent directors outperform those with fewer. This conclusion is supported by both agency theory and resource dependence theory. These theories posit that having more independent directors on the board enhances monitoring, thereby improving a company's performance. This is because independent directors rely less on management and are primarily focused on safeguarding their reputation (Zhu et al., 2016). Furthermore, our findings align with previous research conducted by Kao et al. (2019), Kanakriyah (2021), Kyere and Ausloos (2021), Ali et al. (2022), and Neralla (2022).

Hence, the CEO duality hypothesis (*H3*) has a somewhat positive influence on *ROA* (with a coefficient of 0.0428) and a substantial influence on *Tobin's Q* (with a coefficient of 0.327). This demonstrates that CEO duality has a positive effect, and increases one's feeling of responsibility for the company, ultimately leading to greater interest and a stronger desire to enhance the company's success. This may be observed in examples like Goergen et al. (2020), Nguyen et al. (2018), and Kanakriyah (2021). Moreover, the JCGC of 2009 stipulates that the roles of chairman and CEO must be separate, contradicting their advice. Consequently, the findings of this research contradict the resource theory, while aligning with and providing support for the agency theory.

The estimated findings validate *H4* showing that OC and companies' performance are positively and significantly related, with a coefficient of 0.00531 for *ROA* and 0.00875 for *Tobin's Q*. This suggests that companies with higher OC tend to perform better. This finding aligns with the agency theory, as it illustrates how OC can serve as a control mechanism that aligns managers' behavior and actions with shareholders' interests. More evidence suggests that OC positively affects a company's success (Nashier & Gupta, 2020; Puni & Anlesinya, 2019; Alkurdi et al., 2021; Peng et al., 2021; Sewpersadh, 2022; Iwasaki & Mizobata, 2020). This strand of research believes that companies that focus on large shareholders can enhance corporate image, attract additional resources, and increase their performance.

Regarding board size, in the situation of OC moderating influence, the estimated result of *H5* validates that board size has a statistically significant influence on *ROA* with coefficient values of 0.000111 and 0.000197 concerning *Tobin's Q*. The interaction influence of OC on the board

size-firm performance relationship is positively significant, which aligns studies of Guizani (2013) and Amrah et al. (2015), lending credence to agency theory's contention that OC enhances corporate performance by significantly enhancing board oversight and the performance impact of board size. This proposes that board size significantly impacts a company's success when ownership is concentrated. This is due to the OC having the ability to adjust the board size as per business demands and challenges. The study's results contradict the findings of Habtoor (2020), where the author observed a significant negative moderating impact of OC on the link between performance and board size, as determined by ROA and Tobin's Q.

The board independence in *H6* demonstrates a coefficient value of 0.00144 and a p-value of < 0.1, which statistically impacts *Tobin's Q*. This result indicates that OC moderates the board's independence and performance relationship favourably. In the Jordanian context, relative to our sample, having a major shareholder increases the efficacy of monitoring by independent directors, which is in agreement with Guizani (2013). Moreover, the impact of *OC* on the link between *Board independence* and *ROA* is insignificant in the case of *ROA* (coefficient value of 0.000416 and p-value of < 0.1). This is partly congruent with the findings of Tavalaei and Ashrafi (2017). Given that the coefficient with respect to the interaction term between *Board independence* and *OC* is insignificant, it indicates that independent directors and significant shareholders may not collaborate to influence the performance of Jordanian publicly listed enterprises.

Finally, *H7* presents the moderate impact of *OC* on the link between *CEO duality* and *Tobin's Q* (having a coefficient value of 0.000738 for a p-value of < 0.01) with a statistically significant impact on *Tobin's Q*. This supports the agency theory. In addition to previous studies (Guizani, 2013), CEO duality and significant OC may strengthen board influence. In the moderating effect of the OC case, the *ROA* estimated result of the second column (2) has confirmed that *CEO duality* (having a coefficient value of 0.00130 and a p-value of < 0.01) has an insignificant impact on *ROA*. The interaction effect of *OC* on the *CEO duality–ROA* relationship is insignificant. This suggests that under a higher concentration of ownership, CEO duality becomes less effective and does not significantly affect a firm's performance in Jordan. This negates *H7*, which argues that, from both a resource dependence perspective and theory, the interaction of CEO duality and OC will improve Jordanian ROA, which is in agreement with Ojo (2021). This research result contradicts Singh et al. (2018) and Habtoor (2020). The findings of this study showed that all the independent variables are accepted, and the moderating hypotheses are accepted, except for the ROA in relation to CEO duality and board independence.

By integrating agency theory and resource dependence theory, the findings emphasize the importance of understanding how specific BOD and OC interactions can improve firm performance. The findings underscore that BOD and OC play a role in addressing principal–principal conflicts and influencing firm performance. The findings suggest that OC can be a valuable alternative for monitoring and enhancing performance, particularly in environments with weak institutional frameworks. Notably, the study reveals varying effects of CEO duality and board independence on ROA, indicating complexities in the relationship between governance structures and financial outcomes. This opens avenues for future research to delve into the reasons behind these differences.

Table 5. Estimated results of structural equation model with the moderating effect of OC

Variable	***(2)***	***(3)***
	ROA	***Tobin's Q***
Board size	0.0209***	0.0107*
	(0.00695)	(0.0141)
Board independence	0.00668*	0.0327**
	(0.00817)	(0.0166)
CEO duality	0.0428	0.327***
	(0.0424)	(0.0860)
OC	0.00531*	0.00875*
	(0.00670)	(0.0911)
*OC * Board size*	0.000111*	0.000197*
	(0.000158)	(0.000320)
*OC * Board independence*	0.000416	0.00144*
	(0.000364)	(0.000738)
*OC * CEO duality*	0.00130	0.000738**
	(0.00150)	(0.00305)
Constant	-0.135**	1.034***
	(0.0541)	(0.110)
Observations	460	460
R-squared	0.24	0.73

*Note: Standard errors are in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.*

5. CONCLUSION

This study highlights BOD and their influence on firm performance through the use of OC as a moderator, with the purpose of strengthening their relationship. The institutional backdrop represented by Jordan is noteworthy because the majority of listed firms on the ASE exhibit significant levels of OC controlled by controlling shareholders (Saidat et al., 2019; Freihat et al., 2019).

Although previous research has concentrated on the direct effects of BOD and OC on company performance, no prior study has empirically examined whether OC has an impact on the link

between BOD and the performance of Jordanian firms. Following existing literature, the BOD indicators included CEO duality, board size, and board independence. Similarly, Tobin's Q and ROA were employed in the current paper to evaluate the firms' performance.

As previously stated, the primary objectives that this research aimed to accomplish were as follows: to study the direct relationship between BOD and the performance of Jordanian non-financial companies, along with exploring the moderating impact of OC on this relationship. Moreover, this study utilized SEM techniques to address causality and endogeneity issues in BOD relationships. Focusing on agency problems and resource dependence theory, the analysis indicated a positive and significant association between BOD and the performance of Jordanian companies.

Furthermore, the findings of this research also indicate a positive relationship between firm performance and OC. Moreover, in the moderating effect of OC, the results have confirmed that BOD possesses a positive and statistically significant impact on firm performance. However, the findings indicate that board independence and CEO duality have insignificant influence on ROA. Therefore, this article provides assistance to various stakeholders, including firm managers, regulatory agencies, market participants in the ASE, nations with significant OC, and policymakers. Its aim is to enhance their comprehension of the relationship between BOD and firm performance. The study shows that larger boards, board independence, and CEO duality benefit listed firms in Jordan, where businesses thrive on connections and trust. By integrating resource dependence theory and agency theory, OC could serve as an alternative monitoring proxy and enhance the performance of the BOD in Jordanian-listed firms.

Like previous empirical studies, this one includes flaws that might guide future research. First, the financial firm's sector was omitted from the research due to regulatory frameworks and various CG regulations provided by the Insurance Authority and the Central Bank of Jordan. Thus, including the financial sector in future research might improve knowledge of CG processes in Jordan. Second, given that this study exclusively focused on Jordanian companies in the service and industry sectors, the small sample size of 460 observations from 92 firms, and the fact that it only examines data from one country may cause the findings to be limited in their generalizability. Consequently, the next step is to expand the scope of this study by collecting data from more firms and evaluating it from a global perspective to get a deeper understanding of the link between dimensions of CG and corporate performance with the moderating role of OC. Moreover, the positive moderating role with respect to OC on firm performance opens the door for future research examining its role in other factors of the CG mechanism.

However, the COVID-19 pandemic has triggered a global catastrophe, impacting not only people's health and social lives but also on global economy and various types of enterprises worldwide. Consequently, we propose that further research be conducted to investigate the impact of the COVID-19 crisis on the characteristics of the BOD, in addition to other factors that can enhance a company's performance. Furthermore, this study also examined ownership structure variables, specifically OC. As a result, the conclusions of this research suggest that future researchers should consider influencing elements, such as different types of ownership. Nevertheless, despite these minor limitations, this study elucidates the relationship between the BOD and Jordanian firm performance, allowing us to generalize the findings.

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