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DOES BOARD STRUCTURE MATTER FIRM'S VALUE? THE JORDANIAN EVIDENCE

Abstract

This study aims to examine the impact of board structure on firms' value in Jordan. Panel regression estimates were used to analyze the data collected from forty-four non-financial firms that listed on the Amman Stock Exchange for the period 2010–2021. Random effects model was applied using a dependent variable (Tobin's Q), four independent variables (board size, independent directors, female directors, and CEO duality), and four control variables (firm size, age, leverage, and liquidity). The result provides ample evidence that CEO duality exerts a direct positive effect on firm value in Jordan. However, none of the independent variables used has a significant impact on firm value, conflicting with agency and resources dependence theories. Firms value is significantly influenced only by two control variables, i.e., a positive impact of firm size and leverage at the 5% significance level. The results indicate the imperfection of corporate governance compliance by Jordanian listed firms in the area of ensuring maximum firm value. These results could be helpful to the policymakers in Jordanian listed firms to enhance their leadership qualities and satisfy CEO desires to avoid agency conflict.

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INTRODUCTION

Corporate governance has become more crucial in contemporary times as firm grow and raised up in both developed and developing countries (Sethi et al., 2023). The corporate governance is vital in ensuring effective supervision role of corporate board and ensuring protection of shareholders' interests. Good corporate governance practices promote accountability, transparency, and integrity of the board function. The board's unique characteristics can help firm in reducing their dependence on the external environment and improve their performance. In this sense, the recent global crises have motivated numerous corporations worldwide to improve their corporate governance practices because they believe a well-managed board structure can provide good corporate performance.

Recently, the issue of selecting specific board characteristics has increasingly become more essential for corporations worldwide and Jordan, because it reduces the agency conflict between agents and shareholders and protects stockholders interests. Moreover, it motivates management staff to maximize shareholding wealth. Robust evidence confirms that applying corporate governance effectively leads to maximize firm's value (Boshnak et al., 2023; Raboshuk et al., 2023; Alodat et al., 2022; Al Sawalqa, 2021). It is important to look into the board characteristics and how these factors can influence the perfor-

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mance of firm as the board of directors secured the shareholders' interests and controlled the company activities. Therefore, this study aims to examine the impact of board structure on Jordanian firm's value that listed in Amman stock exchange for the period (2010–2021).

1. LITERATURE REVIEW AND HYPOTHESES

Over the last decade, there have been many studies investigating links between corporate governance and firm performance in various capital markets (Kiptoo et al. 2021; Guluma, 2021; Bhagat & Bolton, 2019; Asogwa et al., 2019; Danoshana & Ravivathani, 2019; Assenga et al., 2018). These studies provided different and inconclusive results due to different contextual factors, methodologies, and conceptual models. In this sense, Yu (2022) argued that only 7% of the total conducted previous studies (22 out of 314) in developed and developing economies were targeting the Middle East.

Sethi et al. (2023), Khatib and Nour (2021), Kiptoo et al. (2021), and PuchetaMartínez and GallegoÁlvarez (2020) primarily underpinned the agency theory. They provided a strong argument that supports the relationship between corporate governance and firm performance. In this regard, Jensen and Meckling (1976) stated that the primary goal of shareholders is to increase the firm value, and they delegate this goal to their managers. Nevertheless, the managers' interests may conflict with those of the stockholders. Thus, Fama and Jensen (1983) suggested the agency relationship between the principal and the agent. They believe the board of directors is vital in controlling management staff and improving firm performance. However, these studies have shown inconclusive results. They demonstrated the supervision role and ignored the resources provided by board members to the companies. Pfeffer and Salancik (1978) argued that resource dependency theory is important in helping companies to maximize their profit and lower running costs by reducing their dependence on external financing.

The agency theory asserted that large board size inversely affects the performance of any corporation (Guest, 2009; Arora & Sharma, 2016; Malik & Makhdoom, 2016; Afrifa & Tauringana, 2015; O'Connell & Cramer, 2010; Mak & Kusnadi, 2005). However, Jensen (1993) argued that a board with less than seven directors is more likely to be effective and more accessible for the executive manager to monitor. PuchetaMartínez and GallegoÁlvarez (2020), Riyadh et al. (2019), Khan et al. (2019), Jackling and Johl (2009), Chen et al. (2005), and Kiel and Nicholson (2003) argued that large board size is more captive to the CEO making top management more powerful in investment and financial decisions. However, Garba and Abubakar (2014), Haji (2014), and Ferrer and Banderlipe (2012) have shown an insignificant effect of board size on firm performance.

As for independent members in the board, Fama (1980) argued that independent directors in the board can mitigate agency problems between principals and executive management, which aligns with better firm value. This conclusion is supported by Souther (2021), Choi et al. (2021), Malik and Makhdoom (2016), and Bhagat and Bolton (2019). However, Arora and Sharma (2016) and Kumar and Singh (2013) found a negative association between board independence and firm value. In contrast, Khan et al. (2019) argued that board independence did not impact firm value.

The proportion of female directors on the board is considered necessary for firm performance (Kweh et al., 2019). The resource dependency and agency theories affirmed this relationship (Asogwa et al., 2019). In developed countries, women have gotten significant attention in company regulation and equal representation on the board (Fernández-Temprano & Tejerina-Gaite, 2020). Whereas, Alshirah et al. (2022) mentioned that women's representation on the board is minimal and not common practice in developing countries. It is argued that board gender diversity is positively related to firm performance (Amin et al., 2022; Noguera, 2020; Khatib & Nour, 2021; Khan et al., 2019; Agyemang-Mintah & Schadewitz, 2019; Assenga et al., 2018; Triana & Asri, 2017; Francis et al., 2015; Mori, 2014; Darmadi, 2013). In contrast, Ahern and Dittmar (2012) concluded that women directors on the board inversely impact firm value. Alshirah et al. (2022) and Ellwood and

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Garcia-Lacalle (2015) failed to find any correlation between gender diversity and firm value.

As for the CEO duality role, Fama and Jensen (1983) argue that the dual role in the firm increases the power of the CEO, hindering the independence of executive management staff and negatively affecting firm performance. Mubeen et al. (2020), Wijethilake and Ekanayake (2020), Duru et al. (2016), Bhagat and Black (2002), and Firstenberg and Malkiel (1994) argue that CEO duality has negative effect on performance. Nevertheless, PuchetaMartínez and GallegoÁlvarez (2020) found that CEO duality reduces agency problems and improves company performance, which complies with the stewardship theory.

As for control variables, Naseem et al. (2020) showed that firm size plays a significant role in corporate governance and performance. Ibhagui and Olokoyo (2018) mentioned that firm size positively impacts performance. As for the leverage factor, Modigliani and Miller (1958) stated that leverage is irrelevant in increasing the firm performance. However, Detthamrong et al. (2017) argue that higher debt levels in assets lead to higher firm value. Triana and Asri (2017) conclude that firm age has a negative effect on firm value. Lastly, Alfawareh et al. (2021) argue that liquidity is vital for firm performance. They provided that liquidity is positively related to firm performance. However, Nguyen et al. (2020) mentioned that liquidity adversely affects firm value.

Based on the literature review, the research yields mixed and inconclusive results regarding the impact of board structure on firm value in Jordan. Therefore, this paper formulated the research hypotheses as follows:

H_1: *Large size of the board adversely affects firm value in the Jordanian context.*

H_2: *Independent directors positively affect firm value in the Jordanian context.*

H_3: *The presence of female directors positively affects firm value in the Jordanian context.*

H_4: *CEO duality adversely affects firm value in the Jordanian context.*

2. METHOD

This paper examines whether board characteristics improve firm value in the Jordanian context. Moreover, it mitigates the vertical agency problem between shareholders and agents. For this purpose, this study considers forty-four listed (non-financial) companies in Amman Stock Exchange (ASE) from 2010 to 2021. The secondary data were collected from the audited financial records of the represented sample. This analysis excluded the financial listed firms due to the different regulatory environments of the financial sector. Valid 528 observation values were available for panel data analysis based on the observation method.

This paper uses Tobin's Q (TOBQ) as a proxy of a dependent variable to capture firm value. This ratio is devoted to the book value of equity subtracted from the book value of assets, added market value of equity, then divided by the book value of assets (Kyere & Ausloos, 2021; Brahma et al., 2020). Most previous studies argued that TOBQ is more reliable than other accounting

Table 1. Variables description

Variable	Acronym	Description	Reference
Board size	B.SIZE	The percentage number of board members from number 13.	Jensen (1993)
Board independence	B.IND	The percentage number of independent members from number 13.	Fama and Jensen (1983)
CEO duality	DUAL	A dummy variable 1 represents that the CEO and chair of the board are the same person; 0 otherwise.	Qadorah and Fadzil (2018)
Women directors	FEMALE	The percentage of women members from number 13.	Amin et al. (2022)
Firm size (control)	F.SIZE	Natural logarithm of total assets.	Kiptoo et al. (2021)
Firm age (control)	AGE	Computed based on the establishment year of the firm until 2021.	Sethi et al. (2023)
Leverage (control)	LEV	Measured the level of debts in the firm by debt ratio (liabilities divided by assets).	Amedi and Mustafa (2020)
Liquidity (control)	LIQ	Measured by a current ratio that is calculated by dividing current assets by current liabilities.	Khatib and Nour (2021)

indicators because it reflects firm value in the long run (Krause & Tse, 2016). Table 1 presents the description of the independent and control variables.

Panel data estimates were applied to predict the influence of board characteristics on firm value for forty-four listed firms in the Jordanian stock market between the periods of 2010 to 2021. Therefore, a quantitative approach used 12-year time series data. Panel data regression was used for testing the research hypotheses: ordinary least square (OLS), fixed effect (FE), and random effect (RE). Thus, the three models of regression were tested using F-test to select the suitable model for predicting firm value in the Jordanian context (Breusch & Pagan, 1980). The Lagrange Multiplier test (LM) was carried out to choose the appropriate OLS and RE regression models. However, the Hausman test detects the superiority of the FE and RE models (Hausman, 1978). Moreover, this study uses two-stage least squares to check the endogeneity issue between the board characteristics and firm value. Hence, the model specification is formulated as follows:

$$\begin{aligned} TOBQ_{it} &= \beta_0 + \beta_1 BSIZE_{it} + \beta_2 BIND_{it} + \\ &+ \beta_3 DUAL_{it} + \beta_4 FEMALE_{it} + \\ &+ \beta_5 FSIZE_{it} + \beta_6 AGE_{it} + \beta_7 LEV_{it} + \\ &+ \beta_8 LIQ_{it} + \varepsilon_{it}. \end{aligned} \tag{1}$$

3. RESULTS

Table 2 shows that all the listed firms have Tobin's Q close to 1. This indicates that the sample of listed firms is stable. The board size has a mean value of 8 directors in the board. This means that these firms have adhered to the minimum requirements of five members on the board of directors as regulated in Jordan. The result also shows that independent directors were 34% of the board members, indicating that listed firms have compliance with corporate governance principles in Jordan, which achieved the recommended value that a third of the board should be independent directors. On average, only 11.5% of CEOs are simultaneously chairs of the board. The percentage of women members was 2.39%. This implies that the majority of board directors were men.

Table 3 presents the different diagnostic tests to verify the quality of the panel data set. Correlation coefficients tested the co-linearity situation. The results found a low correlation between independent variables, concluding a non-existence of co-linearity in the panel data model. Therefore, leverage and liquidity have the highest correlation (0.574), lower than 0.8 (Hair et al., 2013). This result is confirmed by Variance Inflation Factor (VIF), concluding that all VIFs were lower than 10 (Salmerón-Gómez et al., 2020). This finding provides evidence that there is no multi-co-linearity issue among research variables.

Table 4 presents the goodness of fit model. This paper performs two optimal fit tests, namely Lagrange Multiplier (LM) and Hausman test, to get the optimal regression model outcomes from OLS, fixed effects, and random effects. The LM test shows that the p-value is less than 0.05, indicating that the random effect is more appropriate than OLS. Moreover, the Hausman test shows insignificant outcomes, concluding that random effect is best out of fixed effect. Hence, the random effects are an underpinning model for panel data estimation.

Table 2. Descriptive statistics

Variable	Observations	Mean	S.D	Max	Min
TOBQ	528	1.0515	0.606	4.212	0.140
B.SIZE	528	7.945	2.193	13	5
B.IND	528	0.349	0.196	1	0
DUAL	528	0.116	0.321	1	0
FEMALE	528	0.024	0.066	0.333	0
F.SIZE	528	17.089	1.245	20.924	14.711
AGE	528	31.180	16.059	72	3
LEV	528	0.352	0.205	0.882	0.078
LIQ	528	2.457	2.042	12.830	1.010
Valid N (Listwise)	528				

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Table 3. Correlation matrix and co-linearity test

Source: E-views estimation.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	VIF
(1). B.SIZE	1							1.173
(2). B.IND	–0.061	1						1.158
(3). DUAL	–0.031	0.183**	1					1.089
(4). FEMALE	0.107*	–0.119**	0.180**	1				1.199
(5). F.SIZE	0.307**	–0.258**	–0.122**	0.045	1			1.285
(6). AGE	0.074	–0.056	–0.063	–0.100*	0.264**	1		1.102
(7). LEV	–0.150**	–0.092*	–0.095*	0.291**	0.077	–0.026	1	1.708
(8). LIQ	0.223**	–0.085*	0.005	0.102*	0.042	0.093*	–0.574**	1.602

Note: * and ** are significant at the 0.05 and 0.01 levels, respectively.

Table 4. Goodness of fit model

Source: E-views estimation.

Test summary	$Chi^2(8)$	$Prob > Chi^2$
Breusch-Pagan LM	620.40	0.0000
Hausman test	3.368	0.909

Hypotheses testing were carried out by using random effects model. F-static is 3.136 and p-value less than 5% indicated the estimated model having good fits (see Table 5). Furthermore, the estimated model presents the regression coefficient estimations. A beta coefficient of board size is positive and insignificant (β = 0.021, *p*-value = 0.257). The result rejects H_1, concluding that board size does not improve firm value. Similarly, the beta coefficient of independent directors is negative and insignificant (β = –0.136, *p*-value = 0.453). H_2 is rejected, indicating that the independent directors in the board will not improve firm value. CEO duality has a positive and significant effect (β = 0.258, *p*-value = 0.004). This result not support $H_{3,}$ suggesting that CEO duality maximizes firm value in Jordan. The finding also concludes that the beta coefficient of women directors is negative and insignificant (β = –0.325, *p*-value = 0.521). Consequently, H_4 is rejected, concluding that women members on the board room do not affect firm value. As for control variables, firm size positively and significantly impacts the value of the Jordanian listed firms (β = 0.118, *p*-value = 0.010). Similarly, the coefficient of leverage is positive and significant with firm value (β = 0.376, *p*-value = 0.005). However, liquidity and age are not found to be significant with firm value.

Based on these results, the hypotheses testing indicate the following findings:

- The analysis shows high firm value is insignificantly associated with large board size (*p*> 0.05). This result not supporting H_1, indicating large board size will not cause an increase in firm value in Jordan.
- The result indicates that firm value is insignificantly associated with the presence of independent directors in the board room (*p*> 0.05). Thus, H_2 is rejected.
- The analysis shows that firm value is insignificantly associated with female directors (*p*> 0.05). Therefore, this result rejects $H_{3,}$ suggesting the female representation in the board will not cause an increase in firm value in Jordan.
- The result implies that firm value is significantly associated with CEO duality (*p*0.05 <). That is, if there is an increase in CEO duality by one unit, it will cause an increase in firm value of 0.258 units assuming other factors are constant. This result does not support negative effect as assumed in H_4.

As for the endogeneity situation, Two Stage Least Square (2SLS) was performed to check whether the current value of the research variables is affected by its value in the preceding period (Wintoki et al., 2012). This test ensures that errors in dependent variables are uncorrelated with the independent variables. This occurs when the firm past values determine the board structure, control variables, and firm value. Hermalin and Weisbach (1998) argued that past poor firm performance would likely cause the shareholders to change the board of directors to ensure healthy board actions, affecting the board structure, control variables, and firm value. This

Table 5. Summary of panel data estimates

Source: E-views estimation.

Variable	OLS model		FE model		RE model		2SLS	
	β	*t*–statistic	β	*t*–statistic	β	Z–statistic	β	*t*–statistic
Constant	–1.635	–4.356 (0.000)	–0.459	–0.360 (0.719)	–1.286	–1.646 (0.100)	–1.240	–1.580 (0.114)
B.SIZE	0.004	0.309 (0.756)	0.020	0.937 (0.348)	0.021	1.134 (0.257)	0.020	1.106 (0.269)
B.IND	–0.084	–0.616 (0.538)	–0.092	–0.444 (0.657)	–0.136	–0.752 (0.453)	–0.136	–0.747 (0.455)
DUAL	0.279	3.460** (0.000)	0.216	2.169** (0.030)	0.258	2.898** (0.004)	0.235	2.624** (0.009)
FEMALE	–0.683	–1.658 (0.097)	–0.201	–0.358 (0.720)	–0.325	–0.642 (0.521)	–0.415	–0.815 (0.415)
F.SIZE	0.141	6.261** (0.000)	0.081	1.105 (0.269)	0.118	2.557** (0.010)	0.1220	2.613** (0.009)
LEV	0.302	2.167** (0.030)	0.417	2.994** (0.003)	0.376	2.830** (0.005)	0.1455	2.631** (0.008)
AGE	0.003	2.035** (0.042)	0.006	–1.114 (0.266)	0.000	0.088 (0.928)	0.001	0.158 (0.759)
LIQ	0.019	1.329 (0.184)	0.013	0.855 (0.393)	0.014	0.959 (0.338)	0.002	0.134 (0.909)
R–squared	0.139		0.582		0.046		0.042	
F–static	10.427		12.973		3.136		3.061	
p–value	0.000		0.000		0.002		0.003	

Note: 2SLS indicates two-stage least squares. β indicates beta coefficients. Dependent variable: Tobin's Q.

study used lagged values of board characteristics as instrument variables, which added more restrictions for board actions. As shown in Table 5, the results align with the findings in the prior regression model (random effect). All lagged instrument variables are independently estimated. Interestingly, OLS regression was more efficient than two-stage least squares. Hence, this indicates that the RE model employed in this study was superior to 2SLS. As a result, the random effect model predictions are more consistent compared to the findings of two-stage least squares (see Table 5).

4. DISCUSSION

The study shows that some board characteristics affect firm value in Jordan. The findings support prior research that board structure has a significant impact on firm value. In addition, this result provides significant evidence of the validity of agency and resource dependency theories in the context of Jordan.

Board size will not maximize Jordanian firm value, contrary to prior studies that argued that managers can maximize their shareholding wealth (Kiptoo et al., 2021; Riyadh et al., 2019). This evidence conflicts with the resource dependence theory that argues that with a large board size, firms can obtain more funds from the external environment and tend to increase firm value (Pfeffer, 1972). This result is also inconsistent with Fama and Jensen (1983), who affirmed that a small board performs more functionally.

The finding confirmed that the independent directors did not influence Jordanian companies' value, concluding that independent members did not have investment decisions to maximize firm value. This result contradicted other studies that corroborated the importance of independent directors for improving firm performance (Khan et al., 2019; Assenga et al., 2018).

The result validated that CEO duality positively affected the value of Jordanian listed firms, suggesting that the same person serves in both positions, which may create a benefit for firm value. However, this finding was different from Mubeen et al. (2020) and Wijethilake and Ekanayake (2020), but consistent with PuchetaMartínez and GallegoÁlvarez (2020),

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who argued that CEO duplication has a positive impact on firm performance. This argument supports the stewardship theory that states CEO duality reduces agency costs and improves Jordanian listed firms' value.

The finding indicated that women directors did not influence the value of Jordanian firms, which conflicts with Amin et al. (2022), Noguera (2020), and Khatib and Nour (2021), who provided strong evidence that it is better to have female members on the board in order to obtain better firm performance. This result is caused by the Jordanian culture and religious values (Alshirah et al., 2022). This postulates that female managers will not contribute a broader range of perspectives in making decision processes and will not reduce agency costs and maximize firm value.

For control factors, the result revealed that firm size had a direct positive effect on firm value, supporting the result of Ibhagui and Olokoyo (2018). Similarly, leverage positively affected firm value in Jordan, conflicting with Vieira (2017). However, liquidity was not found to be significant with firm value. This finding contradicts Alfawareh et al. (2021), who affirmed a significant positive effect of liquidity on firm value. Furthermore, firm age was not found to be significant with firm value. This finding is contrary to Triana and Asri (2017), who argued that age has a negative association with firm value.

CONCLUSION

This study synthesized evidence about board structure's impact on firm value using Jordanian non-financial firms. This issue is considered an exciting topic from an emerging market perspective due to inconclusive results and incomplete research methodology by previous literature.

The results validated the significantly important role of some board characteristics on firm value in Jordan. Thus, factors such as CEO duality, firm size, and leverage positively impacted firm value, conflicting with agency and dependence resource theories and contrary to the research hypotheses. Interestingly, the results provided no evidence that the variables of board size, independent directors, female directors, age, and liquidity affect firm value in Jordan.

This result drew top management's attention to the need to focus on CEOs' satisfaction, achievements, and reputation for maximizing firm value. The result concludes that the powerful CEO duality improves board capabilities to provide valuable resources, positively impacting firm profitability. Thus, CEO positions should be carefully appointed with particular standards because they can impact firm value. To do that, the board should be elected based on leadership qualities, experiences, and professional qualifications rather than shareholders' interests. Moreover, gender diversity through female representation on the board is not commonly practiced in Jordan. Thus, the study motivates the board to reinforce the culture of female representation based on their capabilities and qualification rather than gender equity. Hence, having members on the board with special characteristics is crucial to ensure good board actions.

For future research directions, it is worthwhile to investigate the moderating effect of family involvement on the relationship between CEO duality and firm value. In addition, this study encourages research scholars to conduct further research in the banking sector since the panel data model excludes this industry.

AUTHOR CONTRIBUTIONS

Conceptualization: Mohammed Abusharbeh, Husni Samara.
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Formal analysis: Mohammed Abusharbeh, Husni Samara.
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Visualization: Mohammed Abusharbeh.
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Writing – review & editing: Mohammed Abusharbeh, Husni Samara, Noor Aldeen Al-Alawnh.

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