Outside Directors and Firm Performance: The Moderating Effects of Ownership and Board Leadership Structure

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Abstract

This study examines the nature and significance of the moderating effects of ownership and board leadership structure on the relationship between outside directors and firm performance. Using a sample of 42 non-financial Tunisian firms over the period 2004-2010, the results confirm the agency view of the positive relationship between board independence and performance. Similarly, in accordance with agency theory predictions, the results show that family ownership and CEO duality moderate negatively the outside directors–firm performance relationship. However, contrary to the predictions, institutional ownership moderates negatively that relationship. This can be explained by the substitution effect between corporate governance mechanisms. On the other hand, the largest shareholder ownership seems as a homologizer variable that influences the strength of the outside directors-firm performance relationship.

Keywords: outside directors, firm performance, board leadership structure, ownership, corporate governance, agency theory

1. Introduction

Corporate governance structures and mechanisms have so far been the main focus of many managerial and financial studies. Specifically, the impact of corporate board structure on firm performance has become one of the most discussed issues in the literature (Fama, 1980; Zahra & Pearce, 1989; Hermalin & Weisbach, 1991). Prior research suggests that the board of directors and its monitoring is considered to be the most relevant internal governance mechanism to control managers from self-satisfying behavior (Fama & Jensen, 1983). Kiel and Nicholson (2003) suggest that boards of directors' monitoring can reduce agency costs and, thus, improve firm performance. The extent to which more independent directors on the board benefits shareholders is the subject of much debate in corporate governance literature.

However, the net impact of board independence on corporate performance is not yet completely clear, as prior studies have presented inconclusive evidence regarding this relationship. Many of empirical evidences on outside directors (Weisbach, 1988; Cho & Kim, 2007) sustain the gainful of monitoring and advisory functions to shareholders wealth. Nevertheless, Hermalin and Weisbach (1991) and Bhagat and Black (2002) show no significant correlation between board composition and performance. Yermack (1996) also shows that, the percentage of outside directors does not significantly affect firm performance. On the other hand, following to Krishna (2006) there is no strong prove that independent directors cause the maximization of firm performance. Kumar and Sivaramakrishnan (2008) find that shareholder value or corporate performance can actually improve when board directors are more dependent on the Chief Executive Officer (CEO) or management team but decreases when more independent directors comprise the board. In addition to these results some ambiguity can potentially arise regarding the association between the board structure and firm performance.

Following Elsayed (2011), critical examination of prior studies indicates that the relationship between board independence and corporate performance is hypothesized to be a one-to-one relationship. The problem with this assumption is that it ignores the fact that the success of board of directors as a company control device is more expected to be dependent on some specific factors, as well as on the ability to influence of insiders and outsiders actors (Aguilera, 2005). In this context, Aguilera et al. (2008) suggest that governance with their different

components may complement each other or that the effect of one mechanism can depend upon others. Based on agency theory, the effectiveness of such governance mechanisms as outside directors can be influenced by two factors: ownership structure and board leadership structure. The first factor refers to the ownership rate of the largest shareholder as well as the identity of shareholders. The second factor refers to whether the firm has the same individual to accomplish the double function of the top manager and the head of the board (i.e., CEO duality), or whether it gives these jobs to diverse people (i.e., CEO non-duality).

This study aims to explain the diverse theoretical fundamentals on outside directors as an imperative corporate governance device and their effect on firm performance. The primary objective of the paper is to reexamine the predictions of agency theory with regard to the positive relationship between outside directors and corporate performance in the context of a developing country which is Tunisia. The second objective is to propose and validate various theoretical hypotheses with the moderating effect of ownership and board leadership structure on outside director–performance relationship. The empirical outcome of this study will help to determine the effectiveness of outside directors in the presence of dominant shareholders and CEO duality. It will also help regulators and policy makers to determine board composition in the Tunisian context.The rest of the study is structured as follows. Section 2 reviews relevant literature and develop hypotheses. Section 3 describes data and explains research methodology. Section 4 discusses empirical results. Section 5 concludes the paper.

2. Literature Review and Hypotheses Development

2.1 Outside Directors and Firm Performance

From an agency viewpoint, it is argued that a greater proportion of outside directors on boards act to monitor separately in situations where conflict of interest between shareholders and managers occurs. According to Dalton et al. (1998), outside directors may play a fundamental role in explaining the efficient control exercised by boards committee. Furthermore, independent directors are likely to be more intimately associated with outside investors' interests, to monitor top management decisions more successfully and, thus, to lead to better firm performance. Researchers studying the monitoring function have argued that boards consisting mainly of insiders are not autonomous of existing management or the firms (because of business transactions, family/social associations) have less motivation to monitor management (Weisbach, 1988). However, Boards dominated by outside, nonaffiliated directors, are thought to be better monitors because they need this deterrent to monitor. Accordingly, while not always the case, on average outside director supremacy reinforces boards' aptitude to force CEOs to operate in shareholders' interests (Pitcher et al., 2000).

H1: The proportion of outside directors on the board is positively associated to corporation performance.

2.2 The Influence of Ownership Structure

Effectiveness of outside directors as governance devices depends upon the bargaining power of diverse ownership constituents of a company (Cho & Kim, 2007). In Tunisian companies, large shareholders with concentrated ownership exert major influence, with senior managers regularly being dependent on these large shareholders. Tunisian companies' internal governance mechanism can be described as characterized by large shareholders' direct control. According to Guizani et al. (2008), for a sample of 51 Tunisian companies over the period 1998-2004, the voting power of the biggest shareholder is quite high (71 percent) making him very powerful. The agency costs which arise within Tunisian companies are initiated by large shareholders desiring to dilute the wealth of minority shareholders. In this context, the weight of large shareholders can be a constraint to the efficacy of outside directors. Given the latitude controlling shareholders have in selecting both directors and supervisors, they can entrench themselves further by selecting directors or supervisors less likely to monitor (Yeh & Woidtke, 2005). Cho and Kim (2007) show that the firm performance may decline due to the larger power concentration in the hands of large stockholders. In such context, outside directors may not operate as efficient monitors of management.

H2: The power of the largest shareholder negatively moderates the positive relationship between the outside director participation rate and firm performance.

Large shareholders activism can differ dramatically according to the identity of large shareholders. Recent literature recognizes that family control may bring about more effective management and supervision, and thus lead to lower owner–manager agency cost which is referred to as Agency Problem **I** (from the separation of ownership and management), compared to non-family firms. However, according to Wei et al. (2011) expropriation and abuse of control rights exercised by family blockholders is potentially more severe and become a major agency problem which is attributed to as agency problem **II** (from conflicts of interest between controlling and non-controlling shareholders). Families like directors in a widely corporation may have sufficient

stake to justify their monitoring behavior and take disproportionate benefits but disadvantageous to the corporation. This family's strong incentive to extract private rents raises the question of how to actually manage Agency Problem II. Prior research suggests that the board of directors is considered to be the most essential internal governance mechanism to control managers from self-satisfying behavior (Fama & Jensen 1983). However, for family firms, the board's role may be less effective (Yeh & Woidtke, 2005). Ibrahim and Samad (2011) find that board independence does not have any significant impact on performance in family firms. They contend that independent directors sometimes are not truly independent. The authors argue that the number of independent directors may not be sufficient to monitor the board. Using data from Australia, Setia-atmaja et al. (2009) show that the impact of board independence is weaker for family firms than non-family firms. They argue that a strong presence of family dominance in family firms influence the appointment and replacement of independent directors which may reduce the effectiveness of their monitoring resulting in a negative impact on firm performance.

Hypothesis 3: The power of family shareholders negatively moderates the positive relationship between the outside director participation rate and firm performance.

In contrast, Shleifer and Vishny (1997) argues that larger investors, such as institutional investors can provide a possible solution to the principal-agent problem because they own a large equity position in the firm to be motivated to monitor managers and possess sufficient voting rights to exercise potential change. The literature recognizes that institutional investors serve a significant role as monitors in the stock market. The efficient monitoring hypothesis initiated by Bathala et al. (1994) provides that institutional investors, by their expertise, can mitigate information asymmetry between insiders and outsiders. Given their growing control in the equity markets, it is possibly not surprising that institutions have become more active in their role as stockholders. According to the authors, the specific issues addressed by the institutional proposals can be categorized as the repeal of antitakeover amendments, changes in voting rules, and increased board independence. On the other hand, institutional investors can use their voting power to change the composition of the board of directors, and even the corporate charter itself. They may make the monitoring role of outside directors more effectively. Contrary to individual investors, institutions enhance the effective monitoring by the board of directors and leads to better performance.

H4: The power of institutional shareholders positively moderates the positive relationship between the outside director participation rate and firm performance.

2.3 The Influence of Board Leadership Structure

The second factor influencing the effectiveness of outside director control mechanisms is the board leadership structure. There are two board structure practices, the one-tier method and the two-tier method. In the first system the CEO is also president of the board, whilst the second system the board chairman is separate from the CEO. The agency literature maintains that keeping distinct the two roles of CEO and board chairman facilitates more effectual monitoring and control of the CEO and may doing better than those with CEO duality (Rechner & Dalton, 1991). CEO duality can be an indicator of the power of senior management. According to Cho and Kim (2007), a powerful manager can lead to managerial discretion, and managers tend to dominate the board of directors for their own interests. CEO duality may give enormous power and authority to the CEO, which may weaken the board. The managers may not need competent board members as they challenge their power and authority and consequently have not sufficient margin of maneuver to impose their plants and thereby maximize their self-interest (Rashid et al., 2010). It is also argued that corporations with dual directors are less probable to replace a dysfunctional CEO, because he may have effect not only on higher management but also on other board members. Monitoring by the board depends on the distribution of power between the Chair of the board and the CEO (Pearce & Zahra, 1991). Boards under CEO authority will be inclined to operate and communicate inadequately and "rubber-stamp" management decisions (Charan, 2005). Separation of responsibilities will avoid CEO entrenchment and set up autonomy between board and management (Fama & Jensen, 1983).

H5: CEO duality negatively moderates the positive relationship between the outside director participation rate and firm performance.

3. Data and Methodology

3.1 Sample Selection and Data Sources

The sample consists of all non-financial companies making public offering in Tunisia during the time period 2004-2010. The use of listed firms is explained firstly to data availability and "reliability" as the legal requirements for publicly traded company. Financial companies are excluded because of their different

regulation and disclosure requirements. Firms with missing information are also excluded. The final sample size consists of 42 non-financial companies, yielding 294 firm-years observations. The sample selection is reported in Panel A of Table 1. The data on board composition, ownership structure and financial statement were gathered from the annual reports of each company registered in the official bulletins of the Tunisian stock exchange (TSE) and the financial market council (FMC) available on their websites. Panel B of Table 1 classifies the sample by business sector. The results show that firms are prevalent in various sectors such as industrial firms (14), consumer goods (12), consumer services (6), basic material (4), health care (3), telecommunication (2) and oil and gas (1). Panel C of Table 1 classifies the sample by market listing. As indicated by the results, 71.43% of firms are listed on the Tunisian Stock Market and 28.57% are not listed.

Table 1. Sample description

Panel A- Sample selection	
Firms	**Frequency**
Firms making public offering	167
Less	
Financial companies	63
Companies with missing data	62
= Total	*42*

Panel B- Sample distribution by sector		
Business sector	**Frequency**	**Percentage**
Consumer goods	12	28.57%
Consumer services	6	14.29%
Health care	3	7.14%
Telecommunication	2	4.76%
Industrials	14	33.33%
Basic material	4	9.53%
Oil and gas	1	2.38%
Total	*42*	*100%*

Panel C- Sample distribution by market listing		
Market listing	Frequency	Percentage
Listed firms	30	71.43%
Non listed firms	12	28.57%
Total	42	100%

3.2 Variables Definition

3.2.1 Dependent Variable

According to Bathula (2008), there are two broad sets of measures of performance used in the literature: accounting based measures and market based measures. Utility of each of these measures has been criticized by different authors. The critics addressed to accounting measures focus on the backward looking of these measures. On the other hand, market based measures are considered to be based on the perception of investors. To measure a firm's performance, many scholars favor accounting based variables. The idea behind this method is perhaps to consider managerial performance–how well is a firm's management using the assets to generate accounting returns of investment, assets or sales.

Given that firms are not all listed (only 72% are listed), we use an accounting based measure, return on assets (**ROA**). ROA is measured as earnings before interest and taxes (EBIT) to book value of total assets (Anderson & Reeb 2004; Jackling & Johl, 2009). ROA is associated to management's aptitude to efficiently use company

assets, which ultimately belong to shareholders'wealth (Bathula, 2008).

3.2.2 Independent Variables

Board independence is the main independent variable. Board independence is considered in terms of outside directors' rate (**OUTS**), that is, the number of outside directors deflated by total number of directors (Pearce & Zahra, 1991; Setia-Atmaja et al., 2009). The code of best practice of corporate governance (2008) for Tunisian firms defines independent director as «any person who has no direct or indirect association with the corporation, with one of its group's companies or with its executive management. Consequently, an independent director should not: (i) Be an employee or a corporate officer of the company or of one of its group's companies. (ii) Have direct or indirect ties with an entity that has significant commercial, financial or professional links with the company, with one of its group's companies or with one of the controlling shareholders.(iii) Receive any remuneration from the company other than those as a director or a member of one of the board of directors' committees. (iv) Have subordinate ties with the company. (v) Be related to any entity that receives donations, subsidy or significant funds from the company. (vi) Have family ties with a corporate officer.

3.2.3 Moderated Variables

Moderator variables introduced in this study are ownership structure and board leadership structure (Table 2).

- For the former variable the Tunisian context is concentrated and the control is often in the hand of the first largest shareholder (Guizani et al., 2008). This variable is defined as the fraction of shares held by the largest shareholder (**CONC**), families (**FAM**) and institutional investors (**INST**).

- For the latter variable, The Tunisian legal system does not prohibit CEO duality. It also gives companies that expect to make a strict separation between management and control the possibilities to consider a dual structure with a management board and supervisory board (article 224 of the commercial code). A binary variable is used as a measure for board leadership composition (**DUAL**). This variable takes a value of one if the manager is also the chairman (i.e., CEO duality), and a value of zero otherwise.

3.2.4 Control Variables

Firm size (**SIZE**) and debt ratio (**DEBT**) are control variables. Variance in firm size is controlled by including the log of total assets (Yarmack, 1996) and the debt ratio is controlled by including the ratio of long term debt to book value of total assets (Anderson & Reeb, 2004). Firm size and debt ratio effects are controlled for this study due to the results of previous studies which suggest that firm size and debt are important factors influencing performance.

Table 2. Measures of variables and predicted signs

Variables	Measure	Symbol	Predicted signs
Performance	*Dependent variable* : measured as earnings before interest and taxes (EBIT) to book value of total assets	ROA	
Board independence	*Main Independent variable*: Board independence is measured as the number of outside directors deflated by total number of directors	OUTS	+
Largest shareholder	*Independent variables as Moderated variables* are measured by ownership structure defined as the fraction of shares held by largest shareholder(**CONC**), families(**FAM**) ,institutional investors(**INST**). And Duality of CEO(**DUAL**) is measured by binary variable which takes a value of one if it is found that the CEO also serves as the chairman (i.e., CEO duality), and a value of zero otherwise.	CONC	-
Families ownership		FAM	-
Institutional investors ownership		INST	+
Board leadership structure		DUAL	-
Firm size	*Independent variables as Control variables are measured by* Firm size (log of total assets) and debt ratio (ratio of long term debt to book value of total assets).	SIZE	+/-
Debt ratio		DEBT	+/-

3.3 Analytical Method

Based on the previous research, the study tends to explore the moderating effect of ownership structure and board leadership structure on the association between independent outside directors and firm performance. According to Baron and Kenny (1986), the moderating effect is observed when a moderated variable Z alters the

relationship's strength and/or relationship's form between the independent variable X and the dependent variable Y. The authors specify three relations that can be established: the influence of X on Y: (α_1); the influence of Z on Y: (α_2), and the influence of X and Z on Y: (α_3) in accordance with the following model:

$$Y = \alpha_0 + \alpha_1 X + \alpha_2 Z + \alpha_3 XZ \tag{1}$$

According to Le et al. (2006), if the moderator interacts with the independent variable, the regression coefficient α_3 of the interactive variable XZ in the above equation will prove significant sign. If the interaction proves significant, the second issue to be addressed is whether the suspected moderator is significantly related to the independent variable and/or the dependent variable. If the moderator is significantly related to the independent variable or the dependent variable, the Pearson correlation coefficient between them will be significant. Sharma et al. (1981) propose a typology of moderator variables by identifying four categories as illustrated in table 3a, and table 3b.

In the present study, a hierarchical moderated regression was run for clarifying the main effects of ownership structure and board leadership structure on performance, controlling for size and debt. This study follows the method for identification of moderators as proposed by Sharma et al. (1981) and Le et al. (2006) in four steps (Table 3a):

- *Step 1:* Employ moderated regression analysis to determine whether the suspected moderator considerably interacts with the predictor. If a significant interaction exists, go to step 2. Otherwise, go to step 3.

- *Step 2:* Decide whether the moderator variable is a quasi or pure moderator by analyzing whether it is meaningfully associated with the criterion variable. If it is, then it is a quasi moderator. If not, it is pure moderator. Both quasi and pure moderators impact the formula of the predictor-criterion link.

- *Step 3:* Determine whether the hypothesized moderator is significantly related to the either the criterion or predictor. If it is, it is not a moderator. If it is not, proceed to step 4.

- *Step 4:* Split the total sample into subgroups on the basis of the suspected moderator and test for the significance of predictive validity across subgroups. If significant differences are found, the variable is a homologizer.

Table 3a.Typology of moderating effects

	Z related to X, Y, or both	Z not related to X or Y
No significant interaction of X with Z	Category I	Category II
	Z does not act as a moderator	Z acts as a homologizer
Significant interaction of X with Z	Category III	Category IV
	Z acts as a quasi moderator	Z acts as a pure moderator
	(Effect of the form/direct effect)	(Effect of the form/direct effect)

Table 3b. Moderating effects of ownership structure on outside director-performance relationship

Does ownership structure variable interact significantly with outside directors?			
A. If NO		**B. If Yes**	
- Is ownership structure variable related to outside directors or Performance?		*- Is ownership structure related to Performance?*	
A.1 If YES	**A.2 If NO**	**B.1. If Yes**	**B2. If No**
ownership structure is not moderator variable	- Do subgroup analysis. - Are subgroups different with respect to R2?	*ownership structure* is quasi moderator variable	*ownership structure* is a pure moderator variable

To test these relationships, two models are used. In the first model, the relationship between outside directors and corporate performance is tested.

$$ROA_{it} = \beta_0 + \beta_1 OUTS_{it} + \beta_2 DEBT_{it} + \beta_3 SIZE_{it} + \varepsilon \tag{2}$$

In the second model, interaction variables between board leadership structure (CEO duality) and ownership structure (ownership concentration, family ownership and institutional ownership) are used as follow:

$$ROA_{it} = \varphi_0 + \varphi_1 OUTS_{it} + \varphi_2 X_{it} + \varphi_3 OUTS_{it} \times X_{it} + \varphi_4 DEBT_{it} + \varphi_5 SIZE_{it} + \varepsilon_{it} \qquad (3)$$

Where X is the moderated variable related to ownership structure: CONC, FAM, and INST and board leadership structure (CEO duality): DUAL.

4. Results and Discussion

4.1 Descriptive Statistics

Table 4 presents descriptive statistics for the variables in the analysis. Panel A provides means, standard-deviation, minimum and maximum for the quantitative variables. Panel B provides the modality and the frequency of the qualitative variable. Panel A of Table 4 shows that the average ROA is about 0.1, with a minimum of -0.67 to a maximum of 0.34. The standard deviation is about 0.5. These results indicate the higher discrepancy between firms' performance. The average debt ratio is 20% and the average firm size is 87605325TND (book value of total assets). The ownership structure of the total sample is highly concentrated. The largest shareholder holds about 40% of outstanding shares. Families and financial institutions hold about 30% and 20% of shares, respectively. With regard to board leadership structure, the one-tier system is most common in Tunisia. Generally, there is confusion between the Chairman of the Board and CEO. In the study, the results show that in 81% of cases (33 firms) the CEO is also the head of the board (Panel B).This system does not encourage the independence of the monitoring function as the management and control are concentrated in the same person. In addition, the independence of directors, ensuring effective control is not assured. The results show that, on average, 20% of the board members are independent directors with a maximum of 40% and a minimum of 0%.

Table 4. Descriptive statistics for the full sample

Panel A- quantitative variables				
Variable	*Mean*	*Standard-deviation*	*Minimum*	*Maximum*
ROA	0.1	0.5	-0.67	0.34
OUTS	0.2	0.1	0	0.40
CONC	0.4	0.2	0.11	0.85
FAM	0.3	0.4	0	0.79
INST	0.2	0.3	0	0.62
DEBT	0.2	0.4	0	6.65
SIZE (log total assets)	7.6	0.5	6.33	9.13
SIZE (total assets)	87605325	166234612	2142649	1339942000
Panel B- qualitative variable				
Variable	*Modality*	*frequency*	*%*	
Duality	1	238	81	
	0	56	19	

Table 5 shows the correlation coefficients of the variables. Firm performance has a positive and significantly correlation with outside directors and financial institutions ownership and a negative and significant correlation with CEO duality, debt level and firm size. The correlation matrix also shows that the proportion of outside directors has a positive and significant correlation with financial institutions ownership and negative and significant correlations with family ownership and CEO duality. The correlation between outside directors and ownership concentration is significant and negative. On the other hand, following Judge et al. (1988), this study uses 0.7 as cutoff level to decide whether or not two variables can enter the regression model at the same time. The results show that none of pair wise correlations in this study exceeds 0.7 in absolute value.

Table 5. Correlation matrix

	ROA	DEBT	SIZE	OUTS	DUAL	CONC	FAM	INST	VIF
DEBT	-0.45***	1							1.12
SIZE	-0.18***	0.15***	1						1.15
OUTS	0.30***	-0.22***	0.04	1					1.20
DUAL	-0.21***	-0.01	0.11**	0.06	1				1.07
CONC	-0.03	0.05	-0.03	-0.15***	0.16***	1			1.11
FAM	-0.05	0.01	-0.26***	-0.12**	-0.13**	0.02	1		2.38
INST	0.04	0.06	0.10*	0.27***	-0.01	0.07	-0.47***	1	2.37

4.2 Hypotheses Test Results

4.2.1 Outside Directors and Firm Performance

The relationships between outside directors and firm performance are examined through an OLS regression. To test for multicollinearity, the Variance Inflation Factor (VIF) was calculated for each independent variable. Myers (1990) suggests that a VIF value of 10 and above is cause for concern. The results reported in Table 5 indicate that all of the independent variables had VIF values of less than 10. With respect to the correlations between dependent and independent variables (Table 5), the results (regression 1, Table 6) of equation (2) show a positive and significant relationship between independent directors and firm performance as predicted by hypothesis 1. This indicates that independent directors improve the performance of Tunisian firms. These findings reinforce the recommendation of the code of best practice of corporate governance of Tunisian firms and confirm other empirical studies by Weisbach (1988), Jackling and Johl (2009) and Arosa et al. (2010) on outside directors approve the beneficial control and consultative functions to firm shareholders.

With respect to control variables, the results find a negative and significant coefficients associated with debt level (β = -0.09, p < 0.001) and firm size (β = -0.01, p < 0.05). These results confirm the negative impact of leverage on performance due to agency costs of debt. Furthermore, as the firm size increases, the agency costs are expected to increase since a large span allows for greater managerial discretion and opportunism (Morck et al. 1988).

4.2.2 The Moderating Effect of Ownership and Board Leadership Structure

The main focus of the analysis is to examine the moderating effect of ownership and board leadership structure on the outside directors – performance relationship. Table 6 presents the results estimation assessing these effects. According to the results of regression 3 presented in Table 6, the coefficient of the interactive variable between family ownership (FAM) and board independence (OUTS) is negative and significant (φ = -0.13, p < 0.001). The result suggests, in conformance with hypothesis 3, that family ownership in fact moderates the form of the outside directors–performance relationship. As argued by Setia-Atmaja et al. (2009) and Muttakin et al. (2011), family shareholders have the power to appoint and replace independent directors which reduce the effectiveness of their monitoring. Therefore, an independent manager will never efficiently control those who have put him where he is (Stein & Plaza, 2011). Likewise, this may, in part, be due to the fact that as outsiders, the independent directors may be constrained in term of information. They rely on the insiders for the information required for informed decision making. And there may be information asymmetry (Paul et al., 2011).

In contrast with hypotheses4, the results of the regression 4 (Table 6) show a negative and significant coefficient of the interactive variable between institutional ownership (INST) and board independence (OUTS) (φ = -0.08, p < 0.01). The negative moderating effect of institutional ownership can thus be explained by the substitution effect. As suggested by Rediker and Seth (1995), firm performance is likely to depend on the efficiency of a bundle of governance mechanisms, rather than on the efficiency of any single such mechanism. Even though the whole effect of the mechanism bundle is efficient in aligning principal-agent interests, the influence of any one mechanism may be inadequate to accomplish this alignment. Therefore, different corporate governance methods may be substituted for each other (Cho & Kim, 2007). In this study, stock concentration among institutional investors may serve as a substitute for monitoring by outside directors.

Hypothesis expects that CEO duality negatively moderates the outside directors–corporate performance relationship. Test results (regression 5, Table 6) indicate that the interaction between CEO duality (DUAL) and

outside directors (OUTS) is negative and statistically significant (φ = -0.04, $p < 0.01$). Hence, CEO duality moderates the form of the outside directors–performance relationship. When the firm has one person to execute the duties of the CEO and the chairman, the governance role of outside directors seems to be less effective. As mentioned by Stein and Plaza (2011), the explanations given to back such effects look for to disprove the independent directors' true independence or his aptitude to provide an impartial viewpoint in decision-making. One of the more prevailing theses states that CEO controls membership of the board through his influence on the selection of outside directors. Consequently, they will not have any incentive to go against the management. The findings are consistent with agency theory predictions based on the assumption that CEOs can and will use their authorities to take self-interest activities at the expense of shareholders wealth (Fama & Jensen, 1983). Agency theory considers that duality stimulates CEO entrenchment by reducing the power of the board monitoring.

Table 6. Regression results

Independent variable	Dependent variable: ROA									
	Regression 1		Regression 2		Regression 3		Regression 4		Regression 5	
	Coeff.	T	Coeff.	T	Coeff.	T	Coeff.	T	Coeff.	T
Constant	0.15	3.53***	0.14	3.22***	0.16	3.77***	0.10	2.45**	0.14	3.36***
OUTS	0.05	4.34***	0.05	2.31**	0.03	2.23**	0.09	5.03***	0.09	4.22***
DEBT	-0.09	-8.56***	-0.10	-8.36***	-0.09	-8.40***	-0.10	-8.83***	-0.10	9.34***
SIZE	-0.01	-2.41**	-0.01	-2.05**	-0.01	-2.50**	-0.01	-1.71*	-0.01	-1.69*
CONC			-0.003	-0.24						
OUTS* CONC			0.02	0.58						
FAM					-0.03	-2.15**				
OUTS* FAM					-0.13	-3.30***				
INST							0.03	3.23***		
OUTS* INST							-0.08	-3.19***		
DUAL									-0.03	-2.64***
OUTS*DUAL									-0.04	-3.93***
R^2	45.42%		45.53%		49.54%		50.1%		50.55%	
Adjusted R^2	44.96%		44.75%		48.78%		49.34%		49.85%	
F value	97.94***		58.67***		66.11***		68.50***		71.77***	

Note. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Hypothesis 2 focuses on how the interaction between largest shareholder power and outside directors may affect corporate performance. Table 6 (regression 2) indicates that the interaction between largest shareholder power (CONC) and outside directors (OUTS) did not affect corporate performance (φ = 0.02, $p > 0. 1$). Hence, largest shareholders are not found to be directly related to firm performance, nor moderate the form of the outside directors–firm performance relationship. Consequently, this study tests for the possibility that such largest shareholders moderate the strength of that relationship. In order to do so, the sample is divided at the median value of largest shareholder ownership. Then, the study regresses outside directors along with the control variables on corporate performance for each sub-sample. Table 7 indicates that for high-concentrated ownership, independent outside board membership significantly and positively affected firm performance with a p-value = 0.002 and the model explains 55.64%% of the variation in ROA. For low-concentrated ownership, independent outside board membership positively influences ROA and the model explains just 13.38% of the variation in corporate performance but the results were not significant at conventional levels. This results in concluding that sub-groups (high vs. low concentrated ownership) were different with respect to R Square and largest shareholder ownership was a homologizer variable.

Table 7. Subgroup analysis for examination of the effect large shareholder ownership on outside directors – firm performance relationship

Variables	High-concentrated ownership		Low-concentrated ownership	
	Coefficient	t	Coefficient	t
OUTS	0.06	3.20***	0.01	1.58
DEBT	-0.10	-8.50***	-0.04	-1.70*
SIZE	-0.01	-1.95*	-0.03	-2.79***
R^2	56.23%		15.44%	
Adjusted R^2	55.64%		13.38%	
F value	94.23***		5.95***	

Note. * $p < 0.1$; *** $p < 0.01$.

5. Concluding Remarks

Previous research suggests that board of directors plays a primordial role in corporate governance. Fama and Jensen (1983), Hermalin and Weisbach (1991), Yermack (1996) and Desender (2009) among others argue that the board of directors and its monitoring is considered to be the most essential internal governance mechanism to control managers from self-satisfying behavior. The main characteristic of corporate governance identified in these studies was board composition. In this context, testing the relationship between outside directors as one corporate governance mechanism, which can be utilized to mitigate agency costs, and corporate performance shows mixed findings. In contrast to previous work, it has been hypothesized in this study that the relationship between outside directors and corporate performance is more likely to be moderated by ownership and board leadership structure. Econometric analysis using a sample of Tunisian firms shows that independent directors improve firm performance. This finding provides strong support of the governance role played by outside directors and confirms other empirical studies by Weisbach (1988), Jackling and Johl (2009) and Arosa et al. (2010) on outside directors maintain the beneficial supervising and consultative functions to firm shareholders. This result is in line the recommendations of the Tunisian code on corporate governance about the requirement for the addition of outside or independent directors on the board.

Estimate the above model with largest shareholder as moderator variable, the results show that largest shareholders are not found to be directly related to firm performance, nor moderate the form of the outside directors–firm performance relationship. Moreover, conducting this test on sub-groups (high vs. low concentrated ownership), we find that for high-concentrated ownership, independent outside board membership significantly and positively affected firm performance and the principal shareholder is acting as homologizer variable. On the other hand, as expected, the results confirm prior evidence by showing a negative moderating effect of the family ownership on the outside directors–firm performance relationship. In the Tunisian context, the strong presence of family influences the appointment and replacement of independent directors which may decrease the effectiveness of their control resulting in a negative effect on company performance. For this reason, the Tunisian code on corporate governance presents two major recommendations for family firms. First, they should establish and make people respect psychological and legal dissociation of company's patrimony from that of the family and consider the company as an institution in its own right rather than a personal property. Second, they should engage independent directors.

However, contrary to the predictions, the moderating effect of institutional ownership is negative. This can be explained by the substitution effect between outside directors and institutional ownership as two corporate governance mechanisms. Similarly, in accordance with agency theory predictions, the CEO duality moderates negatively the outside directors–firm performance relationship. This suggests that when the firm has one person to accomplish the functions of the CEO and the chairman, the governance role of outside directors seems to be less effective. Though the family and institutional ownership and CEO duality affect the form (direct effect) of the relationship between outside directors and firm performance, the largest shareholder ownership influences the strength (indirect effect) of that relationship.

This study has implications for both the security regulators and the investors of the Tunisian firms. The findings of this study provides useful evidence for the Tunisian regulator to evaluate the impact of their regulatory change whether the appointment of independent directors is an effective tool to enhance firm performance and whether

the specific ownership and board leadership structure of the Tunisian firms influence the function of independent directors. In addition, these results are a meaningful guide for the Tunisian investors to identify whether the appointment of independent directors can improve corporate governance and, in turn, provide them additional value.

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