

# Ownership Structure, Board Characteristics and Corporate Performance in Tunisia

Amira Turki (Corresponding author)

Assistant Professor, Department of Finance

Higher Institute of Management of Sousse

Rue Abedelaziz El Bahi, B.P. 763, 4000 Sousse, Tunisia

Tel: 216-98-618-058 E-mail: amira.turki@laposte.net

Nadia Ben Sedrine

Assistant Professor, Department of Finance

Higher Institute of Management of Tunis

41, Rue de la Liberté, Bouchoucha, 2000 Bardo, Tunisia

Tel: 216-98-560-409 E-mail: nadiabensedrine1@yahoo.fr

Received: November 8, 2011

Accepted: December 14, 2011

Published: February 16, 2012

doi:10.5539/ijbm.v7n4p121

URL: <http://dx.doi.org/10.5539/ijbm.v7n4p121>

## Abstract

Drawing upon prior empirical research on the potential endogeneity of both ownership structure and firm performance in developed markets, this study examines the reverse causations that can exist between corporate performance and ownership structure in Tunisian listed companies. The study was extended to include board characteristics as a principal internal control mechanism for monitoring managers and an assessment of its potential effects on firm performance and ownership structure. Our findings proved the existence of endogeneity and a two-way causality between ownership variables and Market to book performance. However, our findings also revealed that corporate governance in Tunisian firms needed to be more strengthened based on board characteristics.

**Keywords:** Corporate governance, Ownership structure, Board characteristics, Corporate performance, Endogeneity, Simultaneous equations models

## 1. Introduction

The fact that ownership structure may influence corporate performance is an issue for a central and important debate in the corporate finance literature. The debate goes back to the separation of ownership and control (Berle et Means, 1932). This separation creates agency problems because owners and managers have different objectives (Jensen and Meckling, 1976). That is why the concept of corporate governance has an important role in controlling these problems to align interests of principals and agents. There are different monitoring mechanisms (internal and external) that, if implemented, should improve corporate governance. The external ones are particularly important in the Anglo-Saxon systems that experience dispersed ownership structures. The internal mechanisms are, somewhat, predominant in emergent markets, including Tunisia. We investigate the Tunisian context where shareholders are mainly concerned with the value of their portfolios. This is true in most emergent countries, where ownership structures are very concentrated, institutional investor shareholding is very low and the board of directors represents the main organ of governance.

In fact, ownership structure is a controlling mechanism of corporate governance that can influence corporate performance and shareholders' wealth. Berle and Means thesis (1932) suggests that an inverse correlation should be observed between the dispersed ownership and firm performance. However, Demsetz (1983) opposed to this view and argued that ownership structure should be thought of as an endogenous outcome of decisions that reflect the influence of shareholders on the capital market. In addition, the firm's ownership structure reflects decisions made by shareholders. In this way, ownership structure, whether concentrated or diffuse, ought to be influenced by the profit-maximizing interests of shareholders. Therefore, the relationship between variations in

ownership structure and firm performance should not be systematic.

On the other hand, the relation between boards' characteristics and corporate performance continues to be a fundamental matter in the corporate governance literature. The board of directors is generally considered as a crucial aspect of the corporate structure and an important mechanism of corporate governance. In theory, it provides the link between shareholders and agents (the managers). The board's primary role is to monitor managers on behalf of shareholders.

Our study presents a new evidence of the ownership structure as a mechanism of corporate governance in Tunisia. First, we examine the influence of ownership structure (ownership concentration and insider ownership) on firm performance with particular attention to the non-linear relationship between managerial ownership and firm performance. We note that equity ownership by managers and monitoring by large blockholders are two ways that can potentially reduce the severity of the agency problems. Second, we analyze the impact of board characteristics on the performance of the firm. Finally, we evaluate the possible endogeneity between firm performance and ownership structure. Thus, we consider ownership structure as endogenous and we try to identify its determinants. This is a useful contribution to the literature, as we are not aware of any other study, in the Tunisian context, of the endogeneity of ownership structure. In addition, endogeneity is important in practice but difficult and underexplored in empirical corporate governance research. In addition, this paper contributes to the financial literature by examining the effectiveness of the board of directors as the principal monitoring mechanism in Tunisian firms.

The rest of the paper is organized as follows. The institutional environment in Tunisia is presented in section 2. Theoretical and empirical arguments defining the relationships between governance aspects (ownership structure and board characteristics) and firm performance are presented in section 3. Data and variables are presented in section 4. Our empirical results are given in section 5. Finally, our conclusion is presented in section 6.

## **2. Institutional environment in Tunisia**

The institutional environment in Tunisia presents many interesting features that make its study relevant for this country and for others in the Middle East and North Africa (MENA).

### *2.1 Corporate governance in MENA region*

In most MENA countries, the financial markets are thin and rigidly regulated, government ownership is prevalent and the market forces have a limited role. Corporate governance in MENA economies present four main characteristics: concentration of ownership (due to large family dominated companies), family ownership and control (the market for corporate control is not active throughout the region), bank-based corporate finance (bank loans are the most important form of external finance) and underdeveloped capital markets (capital markets lag behind the banking sector and foreign participation is limited). Corporate governance in MENA countries is also characterised by a major role of the board of directors, the absence of call for a separation between the chair of board and the chief executive officer (CEO), limited protection of the shareholders' rights and the absence of board independence. Corporate governance in MENA region needs to be recognised as a public policy concern of rapidly increasing importance in the region. However, the number of large companies contributing to growth is still limited.

### *2.2 Corporate governance in Tunisian listed firms*

The board of directors is the main organ of governance in Tunisian firms. The Law specifies the size, composition, responsibilities and tenure of its members. The board of directors (BOD) is composed of at least three members and of twelve members at most (Commercial Companies Law, 2000). A shareholder is not required to sit on the board, indeed an employee of the firm can be nominated as a member. Directors' tenure is limited to three years that can be renewed. The BOD elects the CEO who must be a shareholder. The BOD is vested with the most extended powers to act in all circumstances in the name of the firm. Besides, they cannot deliberate any valid decision without at least half of their members being present or represented. Moreover, the structure of board system is optional and the Commercial Companies Law (2000) introduced two structures: the monist structure and the dual one (which consists of a supervisory board and an executive board).

The second main feature of Tunisian corporate governance is ownership structure, most specifically, ownership concentration. In fact, the Tunisian system is characterised by the presence of strong blockholders (often including families) which leads to agency problems between blockholders and minority shareholders. In fact, 80% of total shares are held by the five largest shareholders (Omri, 2003) and, in 15% of listed companies, the first three shareholders hold almost all of the share capital (Khanchel, 2007). In addition to families, the state and banks hold an important part in the shares of the listed firms. However, the participation of the state is becoming

more limited due to privatization. On the other hand, foreign investors can participate within the limits of 50% of the offering of a company. Nevertheless, they hold less than 10% of all stocks. Finally, the participation of institutional investors is still very limited. Insurance and businesses hold only about 11%.

Corporate governance in Tunisia has generally improved in recent years. In fact, a tentative of corporate governance best practices has lastly (in June 2008) been implemented in Tunisia by the Arab Institute of Business Managers. The fundamental principles of this code are the protection of the shareholders' rights, the equitable treatment of the shareholders (including the minorities) and the transparency and diffusion of information. However, the Commercial Companies Law represents up to now, the main reference concerning corporate governance in Tunisia.

### 3. Literature review

Ownership structure is a central theme in the corporate governance literature. We consider two issues of shareholding: ownership concentration and insider ownership. In addition, the relation between board characteristics and firm performance remains a fundamental issue in the corporate governance literature.

#### 3.1 Ownership concentration and firm performance

Ownership concentration is considered as a key governance mechanism. Empirical research has examined the importance of block or large shareholdings in controlling managers, and hence reducing agency costs. The results of these researches are mixed. The expected performance effect of ownership concentration is unclear. Following Berle and Means (1932) and until the eighties, the literature had focused on the advantages of ownership concentration. The main concern was the cost of the separation between ownership and control, or the agency costs (Jensen and Meckling, 1976). The idea is that dispersed ownership in large firms increases the principal-agent problem due to asymmetric information and uncertainty. A review of the studies on the relationship between ownership and performance indicates, in general, a higher profitability in owner-controlled firms as compared to manager-controlled firms (Short, 1994). There is a widespread consensus that a higher degree of control by an external shareholder enhances productivity performance. Chen *et al.* (2005) report a weak relationship between ownership concentration and firm performance. Shleifer and Vishny (1986) show that large shareholders have the incentive to monitor firm management, and that the presence of large shareholders enhances firm performance. Thomsen and Pedersen (2000) find a positive relation between ownership concentration and firm performance. However, the relation is nonlinear indicating that concentration has adverse effects on performance after a certain level. Cho (1998) does not detect any significant link between firm value and shares held by large shareholders. Other similar international studies (e.g. Minguez-Vera and Martin-Ugedo (2007) for Spain) report insignificant relationships between concentrated ownership and performance.

On the other side, concentrated ownership gives the insiders (owners and managers) the opportunity to expropriate (La Porta *et al.*, 2000). Consequently, monitoring managers is not the main problem of corporate governance and the real concern is the risk of expropriation of minority shareholders. Ownership concentration may lead to the extraction of private benefits by controlling blockholders at the expense of minority.

#### 3.2 Managerial ownership and firm performance

The conflict of interest between managers and outside shareholders is less likely to be observed in a highly concentrated ownership structure. The extent of managerial shareholding affects the congruence between managers and shareholders (Jensen and Meckling, 1976). Whereas the primary governance function of outside owners is to monitor management, a larger insider stake reduces the need for such control. Managerial ownership is a way to align the objectives of owners and managers. The convergence of interest hypotheses predicts that insider holdings and economic performance are positively related. From this incentive effect, a positive association between managerial ownership and firm performance is expected. In the same vein, Krivogorsky (2006) finds a positive relationship between managerial ownership and firm performance. However, this relationship remains insignificant. Cornett *et al.* (2008) detect a positive and significant association between managerial ownership and performance. On the other hand, if managers hold large shares of equity, it becomes more difficult for outside owners to exercise control. This entrenchment effect is especially important for high shares of managerial ownership. In this case, managers will not probably maximize firm value and a negative relationship between managerial ownership and firm performance is possible. Switzer (2007) finds a negative and insignificant relation between CEO ownership and Tobin's Q using 3SLS regression.

Morck *et al.* (1988), among others, show that there is a complex relationship between agency costs and managerial shareholdings. Taking the incentive hypothesis and the entrenchment one into account, a non-linear relationship between management's ownership share and firm performance is expected. At low levels of

ownership, the incentive effect is probably dominant, that is, a positive effect is expected. However, at very high levels of ownership, the entrenchment effect might be more important and the effect of ownership on performance could be negative.

### 3.3 Board characteristics and firm performance

Fama (1980) argues that the board of directors is the central internal control mechanism for monitoring managers that help control agency problems. The board plays a major role in corporate governance and is responsible for monitoring managerial performance and preventing conflicts of interests.

#### 3.3.1 Board size

Agency theory predicts that, because groups communicate less effectively beyond a certain size, there is pressure from self-serving managers or entrenched owners to expand board size beyond its value maximizing level. The implication is an inverse relationship between board size and performance. Empirical research also reports conflicting results concerning the association between board size and performance. For instance, Yermack (1996), Eisenberg *et al.* (1998) and Cornett *et al.* (2008) report a negative relation. Cheng (2008) shows that larger boards are associated with lower performance. This association is consistent with the view that both coordination/communication problems and agency problems become more severe as a board grows larger. Conversely, Bhagat and Black (2002), Chen *et al.* (2005) and Black *et al.* (2006) do not find a statistically significant association. Kiel and Nicholson (2003) find positive board size effects on firm performance. Accordingly, a larger board size brings more resources to firms and therefore, might improve their performance.

#### 3.3.2 Outside directors

In order to effectively fulfil their monitoring role, boards of directors must have some degree of independence from management. Indeed, outside directors can play an active role in arbitrating in disagreements between internal managers and help to reduce agency problems. Several studies test for the effect of outside directors' representation in the board on performance and the results are mixed. Rosenstein and Wyatt (1990) find that stock markets react positively to the appointment of outside directors. Hossain *et al.* (2000) also find a positive relationship between higher levels of board independence and firm performance. Chung *et al.* (2003) find that board independence affects performance positively through the ability of outside directors to provide effective management-monitor activities. However, Bhagat and Black (2002) find a negative association between the proportion of outside directors and firm value. On the other hand, Prevost *et al.* (2002) and Connelly and Limpaphayom (2004) do not find a statistically significant relationship.

#### 3.3.3 Board leadership structure

When the CEO is also the chairperson, the capacity of the board to monitor the CEO is weaker (Jensen, 1993). Gul and Leung (2004) suggest that CEOs who also serve as board chairpersons could reduce the board's ability to exercise effective control over management and thereby negatively affect performance. Brickley *et al.* (1997) argue that there are also costs associated with having two persons holding the CEO and chairperson titles. They find no evidence that firms with separate persons perform better than those with the same person holding both titles. In contrast, Pi and Timme (1993) find that firms with one person holding both titles have less cost efficiency and performance than those with two persons holding the two titles. Krivogorsky (2006) and Cornett *et al.* (2008) detect a negative relation between CEO duality and firm performance. Chen *et al.* (2005) find the same relation when they use Market-to-Book. However, they find insignificant relation when they use ROA and ROE as measures of performance.

## 4. Sample, data and methodology

The sample includes an unbalanced panel of 23 non-financial companies (joint stock companies) listed on the Tunisian Stock Exchange (TSE) during the period 1998-2009. The TSE, opened in 1990, serves as an additional source of funding through the mobilization of domestic and foreign investments. A state-run watchdog, the Financial Market Council, regulates the TSE. The stock market was reformed according to international standards in 1994. Later, the TSE was privatized in 1995 and became the central part in the Tunisian financial market. The Tunisian financial system is dominated by banks with domestic bonds. In Tunisia, the government bonds represent the majority of tradable securities, principally due to the absence of companies that are able to make public offering securities.

We remove from the sample companies the banking and financial sectors. In fact, financial sector includes several trusts, which have distinctive different corporate governance structures from other firms. In addition, financial firms are subject to a regulatory framework that may affect the ownership-performance relationship. Our sample size includes 257 firm-year observations with a predominance of industrial firms (61%) in

comparison to firms from the service sector (39%). Moreover, the service sector includes firms in communication, transportation, tourism, etc. Once primarily based on agriculture, the Tunisian economy has become more varied with important manufacturing and tourism sectors. The number of firms listed on the TSE increased from 13 to 45 between 1991 and 2003. At the end of 2009, the number increased to 52 companies. Hence, the market capitalization increased from 610 million dinars in 1991 to 5491 million dinars in 2006. At the end of 2009, stock market capitalization came to 12 227 million dinars.

Information about ownership structure and board characteristics comes from companies annual reports, obtained from the Financial Market Council. Financial and accounting data come from the TSE.

We use as a measure of firm performance the natural logarithm of the Market-to-Book ratio (MTB) defined as the market value of equity divided by the book value of equity. MTB ratio is a permanent valuation indicator of choices of the firm, of management and of strategic perspectives. It also depends on the anticipations of the investors. We find an average value of 0.571.

Insert Table1- here

Ownership concentration (CO) is measured by the Herfindhal index calculated by summing the squared percentages of shares held by the three largest shareholders. The mean value of ownership concentration (0.422) is relatively closed to the Khanchel (2007) descriptors with mean of 0.478, in a study on the Tunisian market during 2000-2005.

We define managerial ownership (MO) as the percentage of ordinary shares held directly by the CEO and executive directors. The mean value of MO is 2.6%.

Board size (BS) is measured as the total number of directors on board. Lower board size is associated with greater firm performance. We find an average value of 9.215, which means that the boards of directors of Tunisian firms had 9.2 directors, on average.

We define outside directors (OD) as the number of outside directors on the board divided by the total number of directors. The mean value of outside directors (0.399) is higher than that found by Khanchel (2007), 0.131.

Insert Table 2- here

Board leadership structure (CEO) is a dummy variable that equals 1 if the CEO and the chairman are different persons (i.e. separation of functions) and 0 otherwise. In fact, the value of 1 strengthens the level of independence between the board and the leadership. We found that, in only 25.4 % of all firms in our sample, there was no CEO duality, which means that the CEO was also the Chairman of the board in 74.6 % of Tunisian firms.

The size of the company control variable (LTA) is approximated by the natural logarithm of the book value of total assets. Other control variables include leverage (LEV) defined as the ratio of total debt to total assets, liquidity (LIQ) defined as net working capital divided by the book value of assets and firm's systematic risk (BET) which estimated by the market model through a regression of the monthly return on a stock.

Table 3 shows the correlation coefficients of the independent variables. The correlation that should be noted is the (-0.66) correlation between leverage (LEV) and liquidity (LIQ). None of the remaining variables is correlated to a level that is worth noting.

Insert Table 3- here

To test for multicollinearity, we computed the variance inflation factor (VIF) for each variable. The results showed that there were no variables included in the tests with  $VIF > 2.09$  and the mean VIF is 1.78. Thus, multicollinearity did not seem to be a problem for the results.

We use a panel data methodology to carry out the study. Our primary objective is to evaluate the relationship existing between firm performance and ownership structure. Therefore, we developed two different models to check the relation between our different variables. In the first model, we used a simple regression by developing two sets of equations. The first set had firm performance as the dependent variable. The second set included ownership variables as the endogenous variables in two different equations in which the firm performance was the exogenous variable. In addition, we included the squared value of managerial ownership in the performance equation to check for the curvilinear relation between these two variables.

The first model (Model 1) is as follow:

$$MTB_{it} = \beta_0 + \beta_1 CO_{it} + \beta_2 BS_{it} + \beta_3 OD_{it} + \beta_4 CEO_{it} + \beta_5 LTA_{it} + \beta_6 LEV_{it} + \varepsilon_{it} \quad (1)$$

$$MTB_{it} = \beta_0 + \beta_1 MO_{it} + \beta_2 (MO)_{it}^2 + \beta_3 BS_{it} + \beta_4 OD_{it} + \beta_5 CEO_{it} + \beta_6 LTA_{it} + \beta_7 LEV_{it} + \varepsilon_{it} \quad (2)$$

$$CO_{it} = \beta_0 + \beta_1 MTB_{it} + \beta_2 BS_{it} + \beta_3 OD_{it} + \beta_4 CEO_{it} + \beta_5 LTA_{it} + \beta_6 LEV_{it} + \varepsilon_{it} \quad (3)$$

$$MO_{it} = \beta_0 + \beta_1 MTB_{it} + \beta_2 BS_{it} + \beta_3 OD_{it} + \beta_4 CEO_{it} + \beta_5 LTA_{it} + \beta_6 LEV_{it} + \varepsilon_{it} \quad (4)$$

In the second model, we considered ownership structure as an endogenous variable that could be influenced among other observed factors, by firm performance. Consequently, the relationship between ownership structure and firm performance should be detected in the two ways. Hence, the consideration of endogeneity requires working with simultaneous equations models. For this reason, we developed a system of three simultaneous equations. To estimate this system empirically, we employed the two-stage least squares (2SLS) approach. The first equation relates to firm performance as a dependent variable while the second and the third ones relate to concentrated ownership and managerial ownership as dependent variables. To test our hypotheses, the following model (Model 2) was used:

$$MTB_{it} = \beta_0 + \beta_1 CO_{it} + \beta_2 MO_{it} + \beta_3 (MO)_{it}^2 + \beta_4 BS_{it} + \beta_5 OD_{it} + \beta_6 CEO_{it} + \beta_7 LTA_{it} + \beta_8 LEV_{it} + \varepsilon_{it} \quad (1)$$

$$CO_{it} = \beta_0 + \beta_1 MTB_{it} + \beta_2 LIQ_{it} + \beta_3 BET_{it} + \beta_4 LTA_{it} + \beta_5 LEV_{it} + \varepsilon_{it} \quad (2)$$

$$MO_{it} = \beta_0 + \beta_1 MTB_{it} + \beta_2 LIQ_{it} + \beta_3 BET_{it} + \beta_4 LTA_{it} + \beta_5 LEV_{it} + \varepsilon_{it} \quad (3)$$

Our first principal hypothesis is to test the relationship between ownership structure (concentration and managerial) and firm performance. Based on the discussion presented above, we would expect to find either positive or negative effects of ownership variables on firm performance.

Our second hypothesis is to test the simultaneous relationships between corporate performance and ownership structure. Our third hypothesis is to test the simultaneous impacts of board characteristics on firm performance.

## 5. Empirical results

### 5.1 Linear regression results

Linear regression results are reported in Table 4. By focusing on firm performance equations, we remark that MTB ratio decreases with ownership concentration and increases with managerial ownership. These findings reflect the disadvantages (or costs) of ownership concentration and the benefits of managerial ownership. On the one hand, ownership concentration deteriorates the firm market performance and, thus, does not reduce the conflicting interests between large and minority shareholders. Actually, it is argued that ownership concentration increases the majority-minority conflicts (Shleifer and Vishny, 1997) and reduces the market liquidity.

Insert Table 4- here

On the other hand, MO decreases conflict of interest between managers and outside shareholders. This result proved that agency problem between managers and outside shareholders is less observed in highly concentrated equity ownership structure (Davies *et al.* 2005). It is important to note that the majority of Tunisian firms are family-owned companies. In addition, the manager (CEO) is, in general, a family member; if not, he is well controlled by the family members represented on the board. For this reason, large shareholders and/or managers worry about their own interests which are strongly related to the firm performance.

Furthermore, we test for a curvilinear relationship between firm performance and managerial ownership. Thus, our estimation shows that  $MO^2$  affects negatively but insignificantly the MTB ratio. This finding refutes the hypothesis of curvilinear relationship between managerial ownership and firm performance.

With respect to the board variables, BS and CEO separation are negatively related to MTB ratio, and BC presents a positive coefficient. However, only BS is statistically significant. This last result casts doubt on the effectiveness of independent non-executive directors as monitoring mechanism in Tunisia and may be due to the difficulty in recruiting truly independent board members in a small market because there are generally interrelationships (family, friendship...) between internal and external board members. Chen *et al.* (2005) reported a negative coefficient for CEO and positive coefficients related to BS and BC.

Considering the third and fourth equations where firm performance is the independent variable in addition to board variables. MTB ratio was found to be related negatively to ownership concentration and positively to MO, but these associations are insignificant. The first finding proved that Tunisian shareholders were less concerned with the market performance. In fact, Tunisian shareholders are not well informed about the advantages of market performance. Hence, they are not able to accept it. Although these relationships are not significant, they show that there is a reverse causation between ownership structure and firm performance. To check this possibility, we use the simultaneous equations analysis.

On the other hand, BS and OD affect positively and insignificantly ownership concentration. In addition, we found that board leadership structure (CEO) appeared to be negatively and significantly related to concentrated

ownership. The negative association between CEO and CO means that when there is a separation of functions of management and control, the interests of the largest shareholders are not maintained. The explanation that can be suggested by this result is that the board as a monitoring mechanism takes into account the interests of all shareholders including the minority ones, and this may prevent the opportunity to expropriate. Furthermore, we remark that only BS and CEO had a positive significant relationship with managerial ownership (MO). This corroborates the finding in Mak and Li (2001).

### *5.2 Endogeneity of ownership*

2SLS estimation results are reported in Table 5. By focusing on the first equation, ownership concentration is shown to be negatively related to MTB ratio. This finding reflects the fact that even if large shareholders perform efficiently their monitoring functions on management in order to improve firm performance, they are not still interested in market performance and this is explained by the culture of the Tunisian investor who is not yet ready to accept the advantages of market performance. However, this association is not significant.

Insert Table 5- here

On the other hand, BS has a positive impact on firm market performance. On the contrary, CEO and BC affected the market performance negatively. These results show, on the one hand, that the separation of functions is associated with a lower level of market performance. On the other hand, and once again, there are some doubts on the effectiveness of independent non-executive directors as a monitoring mechanism in Tunisian firms. However, only CEO's coefficient is insignificant. Our results show that corporate governance mechanisms (BC and CEO) had proved to be weak in Tunisian companies. Actually, larger boards and the absence of truly independent non-executive directors may result in ineffective corporate governance. MO is positively and strongly associated with MTB ratio. Alternatively, the positive coefficient may be explained by the alignment hypothesis. In addition, the insignificant impact of the squared value of MO on MTB ratio disproved the nonlinearity relation between these two variables.

By focusing on the ownership concentration regression, we note that all coefficients of different variables are significant. We show that MTB ratio has a negative impact on ownership concentration. This result confirms the one found in the firm performance regression. The last regression relating to managerial ownership indicates that MTB ratio is positively related to the MO. This result implies that firm market performance increases with the importance of shares held by managers.

Overall, our results indicate that although ownership variables (concentrated ownership and managerial ownership) are determined by firm performance, firm performance itself is partly determined by these variables. Those findings show that there is a reverse causation between firm performance and ownership structure in which these variables can be influenced, among other observed factors, by each other. Therefore, our findings prove the endogeneity of ownership structure.

## **6. Conclusion**

Our study examines the roles played by two aspects of ownership structure that is ownership concentration and managerial ownership. In addition, we included board characteristics as another mechanism from corporate governance theory. We analysed a sample of 23 listed Tunisian firms over the period 1998-2009 and we tried to answer our core question: does ownership structure affect firm performance and is it as well affected by it?

Our empirical analysis under linear regression shows a negative (positive) and significant association between ownership concentration (managerial ownership) and MTB performance. However, we find that MTB has a negative (positive) but insignificant impact on ownership concentration (managerial ownership). Accordingly, these results led partly to the conclusion that there was a reverse causation between ownership structure and firm performance. Hence, our 2SLS regression proved the existence of endogeneity and of a two-way causality between ownership variables and firm performance. Concerning board characteristics, board leadership structure (CEO) is negatively associated with ownership concentration. This finding revealed that CEO duality was much more likely in family-owned and controlled firms whereby the ownership was concentrated. In addition, we also found that CEO had a negative impact on MTB. Our findings showed that outside directors presented, in all linear regressions, a positive and insignificant coefficient. This result casts doubt on the effectiveness of independent non-executive directors as a monitoring mechanism in Tunisia. It may be due to the difficulty recruiting truly independent board members in a small market because there are generally interrelationships between internal and external board members. Concerning board size, we found a positive and insignificant relation with ownership concentration. For the other three regressions, it presented a negative and significant sign. Therefore, our findings concerning board characteristics provide evidence that the board, as the principal

monitoring mechanism in Tunisian firms, appears weak. These conclusions arose from linear regressions relating to board characteristics were confirmed under 2SLS regression.

This paper provides two major contributions. First, we provide the evidence that endogeneity and the two-way causality between ownership variables and firm performance already exist in Tunisian listed firms. This means that variation in firm performance affects variation in ownership structure (ownership concentration and managerial ownership) and is also affected by it. Second, our findings disproved the hypothesis of curvilinear relationship between managerial ownership and firm performance. Indeed, our analysis extends previous studies in this area and failed to capture this nonlinear association. This is may be due to the insignificant level of shares hold by managers in Tunisian listed firms. Despite these findings, we failed to fully explore alternative specifications of board characteristics in relation to corporate ownership and corporate performance. One implication that can be derived from this analysis is that corporate governance in Tunisian firms needs to be more strengthened. In addition, more effort is needed in order to ensure the true independence of non-executive directors to make sure that they are able to perform an adequate monitoring function. Another potential explanation may be in the endogenous relationship between firm performance and board characteristics. Future studies in this area may focus more on these points and should detect the endogenous role that can be played by board characteristics. This study can be extended by introducing other alternatives of firm performance like accounting measures, financial performance, stock performance, etc. The study will be more interested if all Tunisian listed companies will be considered. In addition, using other econometric methods may be another way to prove these findings.

## References

- Berle, A., & Means, G. (1932). *The Modern Corporation and Private Property*. Macmillan, New York.
- Bhagat, S., & Black, B. (2002). The non-correlation between board independence and long-term performance. *Journal of Corporation Law*, 27(2), 231-274.
- Black, B., Jang, H., & Kim, W. (2006). Does corporate governance predict firms' market values? Evidence from Korea. *Journal of Law, Economics and Organization*, 22(2), 366-413. <http://dx.doi.org/10.1093/jleo/ewj018>
- Brickley, J., Coles, J., & Jarrell, G. (1997). Leadership structure: separating the CEO and chairman of the board. *Journal of Corporate Finance*, 3(3), 189-220. [http://dx.doi.org/10.1016/S0929-1199\(96\)00013-2](http://dx.doi.org/10.1016/S0929-1199(96)00013-2)
- Chen, Z., Cheung, Y. L., Stouraitis, A., & Wong, A. W. S. (2005). Ownership concentration, firm performance, and dividend policy in Hong Kong. *Pacific-Basin Finance Journal*, 13(4), 431-449. <http://dx.doi.org/10.1016/j.pacfin.2004.12.001>
- Cheng, S. (2008). Board size and the variability of corporate performance. *Journal of Financial Economics*, 87(1), 157-176. <http://dx.doi.org/10.1016/j.jfineco.2006.10.006>
- Cho, M. H. (1998). Ownership structure, investment, and the corporate value: an empirical analysis. *Journal of Financial Economics*, 47(1), 103-121. [http://dx.doi.org/10.1016/S0304-405X\(97\)00039-1](http://dx.doi.org/10.1016/S0304-405X(97)00039-1)
- Chung, K. H., Wright, P., & Kedia, B. (2003). Corporate governance and market valuation of capital and R&D investments. *Review of Financial Economics*, 12(2), 161-172. [http://dx.doi.org/10.1016/S1058-3300\(02\)0063-0](http://dx.doi.org/10.1016/S1058-3300(02)0063-0)
- Connelly, J. T., & Limpaphayom, P. (2004). Board characteristics and firm performance: evidence from the life insurance industry in Thailand. *Chulalongkorn Journal of Economics*, 16(2), 101-124.
- Cornett, M. M., Marcus, A. J., & Tehranian, H. (2008). Corporate governance and pay-for-performance: the impact of earnings management. *Journal of Financial Economics*, 87(2), 357-373. <http://dx.doi.org/10.1016/j.jfineco.2007.03.003>
- Davies, J. R., Hillier, D., & McColgan, P. (2005). Ownership structure, managerial behaviour and corporate value. *Journal of Corporate Finance*, 11(4), 645- 660. <http://dx.doi.org/10.1016/j.jcorpfin.2004.07.001>
- Demsetz, H., & Villalonga, B. (2001). Ownership structure and corporate performance. *Journal of Corporate Finance*, 7(3), 209-233. [http://dx.doi.org/10.1016/S0929-1199\(01\)00020-7](http://dx.doi.org/10.1016/S0929-1199(01)00020-7)
- Eisenberg, T., Sundgren, S., & Wells, M. (1998). Larger board size and decreasing firm value in small firms. *Journal of Financial Economics*, 48(1), 35-54. [http://dx.doi.org/10.1016/S0304-405X\(98\)00003-8](http://dx.doi.org/10.1016/S0304-405X(98)00003-8)
- Fama, E. F. (1980). Agency problems and the theory of the firm. *Journal of Political Economy*, 88(2), 288-307. <http://dx.doi.org/10.1086/260866>
- Gul, F. A., & Leung, S. (2004). Board leadership, outside directors' expertise and voluntary corporate disclosures. *Journal of Accounting and Public Policy*, 23(5), 351-379. <http://dx.doi.org/10.1016/j.jaccpubpol.2004.07.001>

- Hossain, M., Cahan, S. F., & Adams, M. B. (2000). The investment opportunity set and the voluntary use of outside directors: New Zealand evidence. *Accounting and Business Research*, 30(4), 263-273.
- Jensen, M. C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *Journal of Finance*, 48(3), 831-880. <http://dx.doi.org/10.2307/2329018>
- Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance and takeovers. *American Economic Review*, 76(2), 323-329.
- Jensen, M. C., & Meckling, W. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360. [http://dx.doi.org/10.1016/0304-405X\(76\)90026-X](http://dx.doi.org/10.1016/0304-405X(76)90026-X)
- Kiel, G. C., & Nicholson, G. J. (2003). Board composition and corporate performance: how the Australian experience informs contrasting theories of corporate governance. *Corporate Governance: An International Review*, 11(3), 189-205. <http://dx.doi.org/10.1111/1467-8683.00318>
- Krivogorsky, V. (2006). Ownership, board structure and performance in continental Europe. *The International Journal of Accounting*, 41(2), 176-197. <http://dx.doi.org/10.1016/j.intacc.2006.04.002>
- La Porta, R., Lopez-De-Silanes, F., Shleifer, A., & Vishny, R. (2000). Investor protection and corporate governance. *Journal of Financial Economics*, 58(1), 3-27. [http://dx.doi.org/10.1016/S0304-405X\(00\)00065-9](http://dx.doi.org/10.1016/S0304-405X(00)00065-9)
- Mak, Y. T., & Li, Y. (2001). Determinants of corporate ownership and board structure: evidence from Singapore. *Journal of Corporate Finance*, 7(3), 235-256. [http://dx.doi.org/10.1016/S0929-1199\(01\)00021-9](http://dx.doi.org/10.1016/S0929-1199(01)00021-9)
- Minguez-Vera, A., & Martin-Ugedo, J. F. (2007). Does ownership structure affect value? A panel data analysis for the Spanish market. *International Review of Financial Analysis*, 16(1), 81-98. <http://dx.doi.org/10.1016/j.irfa.2005.10.004>
- Morck, R., Shleifer, A., & Vishny, R. (1988). Management ownership and market valuation: an empirical analysis. *Journal of Financial Economics*, 20 (Special issue), 293-315. [http://dx.doi.org/10.1016/0304-405X\(88\)90048-7](http://dx.doi.org/10.1016/0304-405X(88)90048-7)
- Myers, S., & Majluf, N. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187-221. [http://dx.doi.org/10.1016/0304-405X\(84\)90023-0](http://dx.doi.org/10.1016/0304-405X(84)90023-0)
- Omri, A. (2003). Systèmes de gouvernance et performance des entreprises tunisiennes. *Revue Française de Gestion*, 29(142), 85-100. <http://dx.doi.org/10.3166/rfg.142.85-102>
- Pi, L., & Timme, S. (1993). Corporate control and bank efficiency. *Journal of Banking and Finance*, 17(1-2), 515-530. [http://dx.doi.org/10.1016/0378-4266\(93\)90050-N](http://dx.doi.org/10.1016/0378-4266(93)90050-N)
- Prevost, A. K., Rao, R. P., & Hossain, M. (2002). Board composition in New Zealand: an agency perspective. *Journal of Business Finance and Accounting*, 29(5-6), 731-760. <http://dx.doi.org/10.1111/1468-5957.00448>
- Rosenstein, S., & Wyatt, J. G. (1990). Outside directors, board independence and shareholder wealth. *Journal of Financial Economics*, 26(2), 175-191. [http://dx.doi.org/10.1016/0304-405X\(90\)90002-H](http://dx.doi.org/10.1016/0304-405X(90)90002-H)
- Ross, S. A. (1977). The determination of financial structure: the incentive-signalling approach. *Bell Journal of Economics*, 8(1), 23-40. <http://dx.doi.org/10.2307/3003485>
- Shleifer, A., & Vishny, R. (1997). A survey of corporate governance. *Journal of Finance*, 52(2), 737-783. <http://dx.doi.org/10.2307/2329497>
- Shleifer, A., & Vishny, R. (1986). Large shareholders and corporate control. *Journal of Political Economy*, 94(2), 176-216.
- Short, H. (1994). Ownership, control, financial structure and performance of firms. *Journal of Economic Surveys*, 8(3), 203-249. <http://dx.doi.org/10.1111/j.1467-6419.1994.tb00102.x>
- Switzer, L. N. (2007). Corporate governance, Sarbanes-Oxley small-cap firm performance. *Quarterly Review of Economics and Finance*, 47(5), 651-666. <http://dx.doi.org/10.1016/j.qref.2007.08.001>
- Thomsen, S., & Pedersen, T. (2000). Ownership structure and economic performance in the largest European companies. *Strategic Management Journal*, 21(6), 689-705. [http://dx.doi.org/10.1002/\(SICI\)1097-0266\(200006\)21:6<689::AID-SMJ115>3.0.CO;2-Y](http://dx.doi.org/10.1002/(SICI)1097-0266(200006)21:6<689::AID-SMJ115>3.0.CO;2-Y)
- Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, 40(2), 185-211. [http://dx.doi.org/10.1016/0304-405X\(95\)00844-5](http://dx.doi.org/10.1016/0304-405X(95)00844-5)

Table 1. Variables and measures

<i>Performance Variable</i>	<u>Market-to-Book (MTB)</u> measured as the natural logarithm of the market value of equity divided by the book value of equity.
<i>Governance Variables</i>	<p><u>Ownership concentration (CO)</u> measured as the Herfindhal index calculated by summing the squared percentages of shares held by the three largest shareholders.</p> <p><u>Managerial ownership (MO)</u> measured as the percentage of ordinary shares held directly by the CEO and executive directors.</p> <p><u>Board size (BS)</u> measured as the total number of directors on board.</p> <p><u>Outside directors (OD)</u> is measured as the number of outside directors on the board divided by the total number of directors.</p> <p><u>Board leadership structure (CEO)</u> is a dummy variable that equals 1 if the CEO and the chairman are different person (i.e. separation of functions) and 0 otherwise.</p>
<i>Control Variables</i>	<p><u>Firm size (LTA)</u> is measured as the natural logarithm of the book value of total assets.</p> <p><u>Leverage (LEV)</u> is measured as the ratio of total debt to total assets.</p> <p><u>Liquidity (LIQ)</u> is measured as the ratio of net working capital to the book value of assets.</p> <p><u>Market risk (BET)</u> measured as the beta coefficient of the stock. It is estimated by the market model through a regression of the monthly return on a stock.</p>

Table 2. Descriptive statistics

<i>Variable</i>	<i>N</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
MTB	257	0.571	0.810	-1.05	2.419
CO	257	0.422	0.179	0.113	1
MO	257	0.026	0.062	0	0.462
BS	257	9.215	1.782	5	12
OD	257	0.399	0.124	0.166	0.857
CEO	257	0.254	0.436	0	1
LTA	257	17.784	0.917	16.148	21.102
LEV	257	0.561	0.486	0.046	3.564
LIQ	257	0.184	0.275	-0.687	0.746
BET	257	0.664	0.623	-0.283	2.641

Table 3. Correlation coefficients of independent variables

	CO	MO	BS	OD	CEO	LTA	LEV	LIQ	BET
CO	1								
MO	-0.199**	1							
BS	0.257**	0.074	1						
OD	0.127*	-0.125*	0.182*	1					
CEO	-0.117	0.43**	0.143*	-0.151*	1				
LTA	0.147 *	-0.168*	0.367**	0.024	-0.262**	1			
LEV	0.321**	-0.078	0.133*	0.241**	-0.129*	0.148*	1		
LIQ	-0.029	-0.031	0.030	-0.007	0.117	-0.318**	-0.669**	1	
BET	-0.076	-0.028	0.085	-0.287**	-0.217**	0.319**	-0.249**	0.182*	1

\*\* , \* denotes significance levels at 1% and 10%, respectively.

Table 4. Panel data regression of the simple relationships between ownership and performance

	MTB	MTB	CO	MO
MTB			-0.02 (-0.20)	0.005 (0.99)
CO	-2.66 (-2.06)**			
MO		0.43 (2.52)**		
MO <sup>2</sup>		-0.833 (-0.27)		
BS	-0.349 (-1.83)*	-0.34 (-1.77)***	0.005 (0.94)	-0.005 (-2.16)**
OD	0.22 (1.33)	0.87 (1.32)	0.005 (0.41)	0.006 (1.17)
CEO	-0.18 (-0.19)	-0.328 (-1.49)	-0.07 (-1.69)*	0.06 (2.05)**
LTA	0.129 (1.69)*	0.149 (1.89)*	-0.03 (-1.77)*	-0.003 (-1.22)
LEV	-0.448 (-3.29)***	-0.424 (-3.03)***	-0.02 (-0.74)	-0.001 (-0.21)
Const	-2.178 (-1.58)	-2.451 (-1.71)	0.47 (1.43)	-0.08 (-0.06)
R-sq	0.295	0.263	0.129	0.258

The t-statistics are in parentheses below estimated coefficients.

\*\*\*, \*\*, \* denotes significance levels at 1%, 5% and 10%, respectively.

Models 1 and 2 include firm performance variable as the dependent one. Model 1 contains ownership concentration, all board variables and two control variables. Model 2 includes managerial ownership as the principal independent variable. Models 3 and 4 take account of ownership variables as the endogenous ones and have performance variable as the independent variable.

Table 5. 2SLS panel data regression

	MTB	CO	MO
MTB		-0.05 (-2.04)**	0.008 (3.52)***
CO	-9.82 (-0.45)		
MO	137.61 (3.34)***		
MO <sup>2</sup>	-23.16 (-0.64)		
BS	0.08 (2.80)***		
OD	-0.09 (-1.75)*		
CEO	-3.69 (-1.27)		
LTA	0.07 (0.08)	-0.12 (-2.22)**	0.06 (1.94)***
LEV	-3.94 (-2.86)**	0.09 (2.25)**	-0.02 (-1.16)
LIQ		0.30 (2.50)**	-0.05 (-2.41)**
BET		-0.09 (-3.30)***	-0.02 (-1.11)
Const	-3.32 (-0.14)	0.37 (0.80)	0.17 (2.00)
R-sq	0.362	0.213	0.193

The t-statistics are in parentheses below estimated coefficients.

\*\*\*, \*\*, \* denotes significance levels at 1%, 5% and 10%, respectively.

Table 5 presents a system of three simultaneous equations estimated by the two-stage least squares (2SLS) approach. The first equation relates to firm performance as a dependent variable while the second and the third ones relate to concentrated ownership and managerial ownership as dependent variables. In these last equations, we exclude board variables but we include two other control variables (LIQ and BET) in order to respect the conditions for identification.