SHAREHOLDER COALITIONS, VOTING POWER, AND DIVIDEND POLICY: NEW EVIDENCE FROM TUNISIA

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Abstract

This paper examines the possible association between the voting power of large shareholders and dividend payout policy for a panel of Tunisian firms over the period 1998-2004. The results show a negative relationship between the control stake of the dominant shareholder and payout rates. In contrast, the presence of another large shareholder affects the payout ratio positively. Our results also indicate that different owner types in control influence dividend policy differently. In particular, the control stake of families is associated with a significant negative impact on the dividend distributed whereas the voting power of financial institutions has a positive effect. We conclude that different owner classes have different role in corporate governance.

Keywords: dividend policy, ownership and control, coalitions, voting power, agency conflicts, Banzhaf power indices.

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1. Introduction

The dividend decision is probably the most controversial of the long-term financial decision making. The seminal work by *Modigliani and Miller (1958, 1961)* established that, in frictionless world, when investment policy is held constant, a firm's dividend policy has no consequences for shareholder wealth. Higher dividend payout ratios lead to lower retained earnings and capital gains, and vice versa, leaving shareholders' wealth unaffected. Motivated by *Lintner's (1956)* finding that firms follow well-considered payout strategies, financial theory has offered a range of explanations for dividend policies based on agency conflicts between corporate insiders and outside shareholders, signalling theories, and taxes.

The agency costs explanation of dividend distribution is the main focus of this paper. This approach modifies two of the assumption of the "Modigliani-Miller theorem": the independence of the investment policy and the absence of distinct characteristics between shareholders. According to the agency cost model of dividends, dividend policy can constitute either a means of control of the managers by the shareholders or a vehicle, through which the former can maximise their own welfare.

Recent empirical research shows that many publicly traded firms around the world have large shareholder in control *(La Porta et al., 1999)*. Large owners (blockholders) may play a valuable role by reducing the familiar agency problems between shareholders and managers, but recent research has emphasized that large block holdings give rise to a second agency problem between block holders and minority investors *(Shleifer and Vishny, 1997)*. Large shareholders prefer to generate private benefits of control that are not shared by minority shareholders. Dividends may be used by controlling shareholders as a means to expropriate wealth from minority investors. The type of majority shareholders is also likely to affect a firm's governance. The activism in control is different from an institutional shareholder to a private person or the state which can affect differently the dividend payout policy.

This paper focuses upon the large-small shareholder conflict by analyzing dividend payout ratio in Tunisia. It complements the existing literature in two ways. First, we investigate the relationship between the dividend payout ratio and the voting power enjoyed by large shareholders. We analyse the impact of the controlling shareholder, a coalition of dominant shareholders and different types of shareholders on the payout ratio. This allows us to test a set of hypotheses derived from agency theory. Second, we advocate the use of Banzhaf indices, derived from game theory, as a relevant measure of voting power in the analysis of dividend policy choices.

We analyse a sample of Tunisian firms over the period 1998 to 2004 and find that the payout ratio is significantly related to voting power of block holders. We find larger holdings of the largest owner to reduce, while larger holdings of the second and the third largest shareholder to increase the dividend payout ratio. The impact of the voting power of controlling shareholders differs across different

categories of block holders (i.e. individuals, financial institutions and the state).

The reminder of this paper is organized as follows. Section 2 reviews prior research on the relationship between ownership structure and dividend policy, develops research hypotheses, and motivates the control variables used in the study. Section 3 displays descriptive statistics of our sample. Data, methodology and results are presented in section 4. Section 5 concludes. All the tables are relegated to the appendix.

2. Payout policy and ownership structure: Background literature and hypotheses

There has been considerable research that seeks to identify the determinants of corporate dividend policy. One branch of this literature has focused on an agency-related rationale for paying dividends. According to *Jensen and Meckling (1976)* agency costs arise with the separation of ownership and control of the firm because managers and shareholders have different objectives. Whenever a firm suffers from agency conflicts, payout policy can serve as a partial remedy to this problem *(Rozeff, 1982)*. The payment of dividends reduces the discretionary funds available for managers for perquisite consumption. *Grossman and Hart (1980)* point out that the dividend payouts mitigate agency conflicts by reducing the amount of free cash flow available to managers, who do not necessarily act in the best interests of shareholders. *Easterbrook (1984)* suggest that when the firm increases its dividend payment, assuming it wishes to proceed with planned investment, it is forced to go to the capital market to raise additional finance. The advantage of keeping the firm in the market for capital is that new investors are better monitors of managers than existing investors, thus reducing agency problems. *Rozeff (1982)*, was among the first to explicitly recognize the role of insiders as one of the monitoring the managers. The cost minimisation model developed by Rozeff combines the transaction costs that may be controlled by limiting the payout ratio, with the agency costs that may be controlled by raising the payout ratio. The optimal dividend policy is the outcome of trade-off between equity agency costs and transaction costs. According to *Jensen (1986)*, firms with substantial free cash flows have a tendency to have high agency costs. The existence of free cash flow may lead management to undertake sub-optimal investment projects. To reduce cash flows available to managers and then reduce agency costs, *Jensen (1986)* suggests that it is better to return the excess cash to shareholders as dividend in order to reduce the possibility of these funds being wasted on unprofitable projects.

The relationship between ownership concentration and dividend payout ratio is a focus of a numerous empirical studies. The presence of large shareholders with high stocks or controlling

shareholders may be harmful to the firm's related parties. As argued by *Shleifer and Vishny (1997)*, when large shareholders gain nearly full control, they start generating private benefits of control that are not shared with minority shareholders. Controlling shareholders may pay out the companies' cash flows to themselves in several ways as including simply paying themselves excessive salaries, giving top executive positions and boards seats to their family members even though they are not capable. Therefore, the salient Agency problem is expropriation of outside shareholders by the controlling shareholder. There are different mechanisms of expropriation, especially we mention dividend payment as one among them *(Faccio and Lang (2000))*. If profits are not distributed to shareholders, they may be diverted by the insiders for personal use or committed to unprofitable projects that provide private benefits for insiders. As noted by *La Porta et al (2000)* "failure to disgorge cash leads to its diversion or waste, which is detrimental to outside shareholders' interest". *Holderness and Sheehan (2000)* notice that the dividend yield and the dividend payout ratio are lower in individual majority-shareholder firms than in similar sized but diffusely owned corporation. *Maury and Pajuste (2002)* report that the ownership and control structure significantly affects the dividend policy in finish listed firms. They find that dividend payout ratio is negatively related to the control stake of the controlling shareholder. In addition, the presence of another large shareholder[23] also affects the payout ratio negatively. In the context of Germany, *Gugler and Yurtoglu (2003)* show that the lower dividend payout of majority-controlled firms is related to the probability that controlling shareholders extract private benefits at the expense of minority shareholders. The power of the second largest shareholder increases the payout. *Thomsen (2004)* has examined corporate dividends payouts as a moderating mechanism between block holder ownership and the stock market value of European firms. Using dynamics panel data analysis he found a negative effect of the level of block holder ownership on dividend payout. Using cross-sectional analysis of corporate dividend policy, *Bena and Hanousek (2005)* show that large shareholders extract rents and expropriate minority shareholders in Czech Republic. They find that target payout ratio for firms with majority ownership is low but the presence of a significant minority shareholder increases the target payout ratio and hence precludes a majority owner from rent extraction. *Harada and Nguyen (2006)* investigate the effect of ownership on the dividend

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[23] Very recently some theoretical papers have started to study the effects that the composition of the controlling group, i.e. the number of large shareholders that share the control of the firm and the concentration of their respective stakes, may have both on the monitoring role on the controlling group (Bolton and Von Thaden, 1998; Pagano an Röell, 1998) and the expropriation of the minority by the controlling group (Bennedsen and Wolfenzon, 2000; Gomes and Noveas, 2001).

policy of Japanese firms. Their results show a negative relationship between ownership concentration and payout rates. Firms with concentrated ownership are less likely to increase dividends when profitability increases and more likely to omit dividends when investment opportunities improve, which is consistent with extraction of private benefits at the expense of minority shareholders. Therefore, this agency literature review generates a set of testable hypotheses:

Hypothesis 1: *there is a negative relationship between the voting power enjoyed by the largest shareholder and firm's payout ratio.*

Hypothesis 2a: *there is a negative relationship between the voting power enjoyed by other largest shareholders and firm's payout ratio. (Coalition formation effect)[24]*

Hypothesis 2b: *there is a positive relationship between the voting power enjoyed by other largest shareholders and firm's payout ratio. (Bargaining effect)[25]*

The identity of shareholder is found to affect the payout ratios as well. *Short et al. (2002)* document that larger managerial ownership is associated with lower dividend payout ratios, while larger institutional stakes results in higher payout. This result is a support for the free cash flow explanation of payout *(Jensen, 1986)* and shows the difference in characteristics between different types of shareholders. Institutional investors are better motivated and more capable to press for a high dividend yield, so that the companies are indirectly led to the control of the capital market. *Shleifer and Vishny (1986)* and *Allen, Bernardo, and Welch (2000)* note that institutional investors prefer to own shares of firms making regular dividend payments, and argue that large institutional investors are more willing and able to monitor corporate management than are smaller and diffuse owners. As a result, corporate dividend policies can be tailored to attract institutional investors, who in turn may introduce corporate governance practices.

In addition, the personal preferences of the controlling shareholders, like a family, are likely to influence dividend policy. Families have often a large portion of their wealth invested in the firms, implying that they have incentives to reduce firm risks too much and prefer to finance their projects with their own funds. *Oreland (2006)* notes that the preference of families and minority shareholders are not the same. Thus there is a risk that families might act in their own interest. On the other hand, the augmented concentration of family ownership constitutes a

means of empowerment of the owner-managers, giving them the opportunity to serve their personal interests.

Trojanowski (2004) examines payout policies of British firms listed on the London Stock Exchange during the 1990s. The results show that the presence of strong block holders or block holder coalitions (in particular, executive directors, financial institutions, and other industrial firms) weakens the relationship between the corporate earnings and the payout dynamics. In a state-controlled corporation, *Gugler (2001)* suggests that the principal-agent problems are more severe because politicians may not actively monitor the companies the state owns. Dividends paid within this category will be determined by the political process without aiming for a specific target payout ratio or the level of dividend smoothing *(Bena and Hanousek, 2005)*.

Consequently, the following effects can be expected:

Hypothesis 3: *there is a negative relationship between the voting power enjoyed by families and firm's payout ratio.*

Hypothesis 4: *there is a positive relationship between the voting power enjoyed by financial institutions and firm's payout ratio.*

Hypothesis 5: *there is a negative relationship between the voting power enjoyed by the state and firm's payout ratio.*

Dividend payout ratio is also determined by other variables. *Jensen's (1986)* free cash-flow hypothesis suggest that if firms have cash in excess of their requirement of investment in positive-NPV projects, it is better to pay these cashes as dividend in order to reduce managerial discretionary funds and thus avoid agency costs of free cash-flow. *Rozeff (1982), Jensen et al. (1992) and Mollah et al. (2000)* find a support of this hypothesis, thus we predict a positive relationship between free cash-flow and dividend payout ratio. The ratio of free cash flow to total assets is considered as the proxy of free cash flow for agency cost arises for free cash flow.

As the choice of payout policy cannot be abstracted from investment opportunities available to the firm. Our model predicts a negative relationship between the past growth and dividend payout ratio since firms prefer to avoid transaction costs due to external financing. According to the pecking order theory, we can expect firms to pay fewer dividends if they experienced past growth. Last studies such as the Rozeff's study find that dividend policy is negatively influenced by the past growth of the firm. As *Rozeff (1982)*, we use the average of the historical sales growth for the 1998-2004 period.

Leverage may also influence firm's choices of payout policy. According to *Jensen and Meckling (1976), Jensen (1986) and Stulz (1988)* financial leverage has an important role in monitoring managers thus reducing agency costs arising from the shareholder-manger conflict. Moreover, some debt contracts include protective covenants limiting the

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[24] In Bennedsen and Wolfenzon (2000) the controlling group will not include all the large shareholders but will be the result of a coalition formation game. Given that private benefits come at the expense of all the non-controlling shareholders, the coalition with the lowest possible ownership stake will have the largest minority group whom to expropriate.

[25] According to Gomes and Noveas (2001), the "bargaining effect" implies that private benefit taking and rent extraction will be less likely in the presence of a controlling group.

payout. Therefore, we expect a negative relationship between payout ratio and leverage. This variable is defined as the long term debt deflated by the book value of equity.

Company size can also affect dividend policy. *Smith and Watts (1992),* document that firms with more assets in place have higher dividend payout ratios. However, *Gadhoum (2000)* showed that the signalling efficiency of dividends diminishes for the larger firms, since larger firms produce much information than smaller one. Therefore, the inclusion of size may be best regarded as a simple control variable, with no particular sign expectation. We employ logarithm of the book value of the total assets as a proxy for firm size.

3. Data construction and methodology

3.1. Data

The base for the selection of our sample was the list of issuers of listed securities admitted to trading on a regulated market or on the unlisted market from the Tunisian securities market commission. The data were collected from the annual reports of each company registered in the official bulletins of the Tunisian stock exchange (TSE) and the CMF. We have excluded companies whose financial information is incomplete during the period of analysis.

We therefore arrive at a sample of 51 companies with data for the years 1998 through 2004, in a total of 357 observations. It includes 23 financial firms, 15 industrial firms and 13 service firms. Table 1 summarizes the key characteristics of the sample firms.[26] The results show that the average free cash flow is 11.7% of total assets which indicate that the funds available to managers of Tunisian firms are relatively high. The existence of these funds may lead management to undertake sub-optimal investment projects. The sample mean values of growth, leverage and size proxies equal 14.3%, 18.6% and 7.664 respectively.

[Insert table 1 about here]

3.2. Measurement of voting power

The analysis of control, though it is crucial for an understanding of corporate governance, is still very much an open research area both empirically and theoretically. A naïve, yet quite often followed in the literature, approach uses just the size of the stake controlled by different block holders. According to *Trojanowski (2004)*, those stakes are assumed to be a (crude) proxy for the strength of a particular investor. For instance, a shareholder with 25% of votes in a dispersed ownership is very likely to exercise an effective control over the company, while a block of

30% of votes in a company with a majority shareholders does not give its holder significant influence unless supermajority requirements are imposed.

The main problem with such an approach is that it ignores the stakes controlled by other shareholders. *Crespi and Renneboog (2003)* suggest that, it is the relative rather than the absolute voting power of a given investor, which determine his ability to extract private benefits of control. Hence, it seems simplistic to consider solely the percentage of shares held by the largest shareholder. A more general approach might take account of the possibility of coalitions of large shareholders being formed for the purpose of control.

The approached adopted here is to use a game-theoretic approach to study the formal power represented by shareholder votes. The idea is to model shareholders as players in a voting game, and to use classical power indices to measure the extent of their control over a target company. Intuitively, such power indices reflect the relative ability of each player (shareholder) to impose his will to the target company through coalitions with other players. As *Crama et al. (2003)*, we propose to use the Banzhaf index, which measures the ability of a voter to swing the decision in his or her own favor. More precisely, the Banzhaf index of a player can be defined as the probability that the outcome of the voting process changes when the player changes her mind unilaterally, under the assumption that all vectors are equally likely *(see Banzhaf, 1965, 1966, 1968)*. To compute the Banzhaf indices, we have considered an oceanic game[27] which can be obtained as the Banzhaf indices for the modified, finite game consisting only of the major players M with weights w_1, w_2, …w_m and quota[28] q – (1-w(M))/2 (Leech, 1999). We have developed an algorithm for the calculation of these indices (see appendix).

Table 2 (panel A and B) illustrates the distribution of voting power (as measured by Banzhaf indices, BZ) among the three largest shareholders and different category of controlling shareholder. Interestingly, we find that the voting power of the largest shareholder is quite high (0.71) making him very powerful. The second and the third largest shareholders have on average 0.11 and 0.09 of the voting power. These results show that the ownership in Tunisian firms is concentrated and the control is often in the hand of the first largest shareholder. The principal shareholder holds the full control in 63% of cases (BZ1>0.5). Panel B shows that in about 43% of all firms the controlling shareholder is an individual or a family with 0.753 of voting power. Another frequent controlling owner category is ownership by financial institutions which controls 41% of firms

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[26] Voting power of large shareholders is discussed in section 3.2. Descriptive analysis of payout ratio can be found in section 4.1.

[27] Banzhaf indices for an oceanic game are studied by Dubey and Shapley (1974).

[28] In a « Proper » game, we must have q ≥ 0.5 to ensure that there is a unique decision. in the empirical work, we take q = 0.5, which amounts to assuming that important decisions require a simple majority.

with 0.708 of voting power. The third category of controlling shareholder is the state which is present in about 16% of all firms and having a high degree of control (0.91).

[Insert table 2 about here]

3.3. Model specification and estimation methodology

Based on predictions of the finance theory and our earlier discussion, we consider the empirical models described as follows:

$$PAYOUT_{i,t} = \alpha_0 + \alpha_1 BZ_{ji,t} + \alpha_2 FCF_{i,t} + \alpha_3 GROWTH_{i,t} + \alpha_4 DEBT_{i,t} + \alpha_5 SIZE_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$PAYOUT_{i,t} = \beta_0 + \beta_1 BZOWN_{ki,t} + \beta_2 FCF_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 DEBT_{i,t} + \beta_5 SIZE_{i,t} + \varepsilon_{i,t} \quad (2)$$

Where, the subscript, i, denotes the sample observation, i = 1, 2, …n, the subscript, j, denotes the first, the second or the third largest shareholder, and the subscript, k, denotes the identity of the controlling shareholder (family, financial institution or the state). The dependant variable, PAYOUT, is the dividend payout ratio measured as the ratio of equity dividends to net profits. FCF, GROWTH, DEBT and SIZE denote the free cash flow, past growth, leverage and the size of the firm respectively.

The estimation of the proposed models is conducted on a panel data. According to *Baltagi (1995)*, panel data give more information data, more variability, less collinearity among the variables, more degrees of freedom and more efficiency.

There are three common regression techniques used in estimating models with panel data. Namely, these three regression techniques are the pooled ordinary least squares, the fixed effects model (Least squares dummy variable model) and the random effects model (Error component model). We use a proper test statistics, namely the F-statistic and the Hausman test to choose the most appropriate model for our sample. The F-statistic tests the null hypothesis that the efficient estimator is the pooled ordinary least squares compared to the fixed effects model. The Hausman test tests the null hypothesis that the random effects model is appropriate for the sample compared to the fixed effects model.

4. Empirical results
4.1. Simple statistics on control structure and dividend payout ratio

Before proceeding to a more detailed analysis of the payout policy of Tunisian firms over the period 1998-2004, we present some preliminary results concerning the dividend-to-earnings ratio for firms with different control structures. We also present t-statistics for differences in mean values of dividend payout ratios between groups of firms according to their control structures.

In table 3, we report descriptive statistics on the dividend payout ratio for two sub-samples – firms with effective control (BZ1>0.5) and firms with shared control (BZ1 ≤0.5). The results show that firms controlled by a majority shareholder have lower mean payout ratio (47.9%) compared to firms controlled by multiple large shareholders (61.0%).

The t-statistic (-4.453) for the difference between dividend payout ratios in firms with effective control (N= 32) and firms with shared control (N=19) is negative and statistically significant at 1% level. This preliminary result suggests that when the principal shareholder holds the full control, firms pay lower dividends. This finding is an indicator for the possibility of expropriation of minority shareholders. In fact, when the large owner is unambiguously in control, he may extract private benefits that are not shared with minority shareholders. The presence of another strong shareholder increases the dividend payout ratios. This result indicates that multiple large block holders are beneficial to minority shareholders.

[Insert table 3 about here]

Table 4 (Panel A) shows that, on average, dividend payout ratio is about 47.6% in family firms, and it is about 59.3% in firms controlled by financial institutions, and finally is about 49.2% in firms where the state is the controlling shareholder. These preliminary results suggest that the identity of the controlling owner is an important determinant of dividend policy. The tests of differences in mean values between the three groups (Family, Financial Institutions and State) are reported in Panel B. the t-statistics show that the difference between dividend payout ratios in family firms and financial institutions held firms is negative and significant at 1% level. The difference in payout levels between financial institutions and state held firms is positive and statistically significant at 1% level.

[Insert table 4 about here]

4.2. Regression results

In this section, we present the regression results of dividend-to-earnings ratios on control structure variables and other control variables in a sample of 51 Tunisian firms. All models were estimated under random effects. We begin with testing the effect of voting power of large shareholders on dividend payout (H1, H2a and H2b), and then we have tested the relationship between the identity of the controlling shareholder and dividend payout ratio (H3, H4 and H5).

Large shareholder's voting power and dividend payout
We examine the effect of voting power concentration on dividend payout controlling for other firm characteristics that could influence dividend policy.

The results for the three models (model 1, 2 and 3) are presented in Table 5. From these results we can derive the following conclusions:

- As predicted by Hypothesis 1, the influence of the voting power enjoyed by the largest shareholder on dividend payout ratio is significantly negative (Model 1). This result indicates that a higher concentration of voting rights by the largest shareholder is associated with lower dividend payouts. This pattern is consistent with the claim by *Shleifer and Vishny (1997)* that dominant shareholder prefers to extract private benefits rather than receive dividends that equally benefit minority shareholders. The results are consistent with *Bena and Hanousek (2005)* who find that firms with majority ownership in Czech Republic pay lower dividends. Large shareholders extract rents from firms and expropriate minority shareholders. *Gugler and Yurtoglu (2003)* also report that majority controlled firms in Germany have lower payouts. In the other hand, *Maury and Pajuste (2002)* find that dividend payout ratio is negatively related to the control stake of the controlling shareholder in Finnish listed firms.

- The voting stake of the second and the third largest shareholder affects the dividend-to-earning ratio positively as predicted by Hypothesis 2b (Model 2 and 3). The coefficient of the second dominant shareholder is statistically significant at the 5% level. This result indicates that firms where control is shared distribute more dividend than firms where control is not shared. This can be interpreted as evidence of a *"bargaining effect"* as predicted by *Gomes and Novaes (2001)*. Bargaining over private benefits between the controlling shareholders can protect the minority from expropriation. Our result is consistent with the argument about a positive monitoring role by another large shareholder, as proposed by *Faccio et al. (2001)* for Europe, and *Gugler and Yurtoglu (2003)* for German corporations. However, this finding contradicts the result of *Maury and Pajuste (2002)* for Finnish listed firms. They suggest that the largest and the second largest shareholders might collude in generating private benefits by paying lower dividends.

- In line with earlier expectations (see Section 2), firms that experienced a higher rate of annual growth pay less dividends in order to avoid transaction costs of external financing. The result is in agreement with the findings from *Jensen et al. (1992)*, *Fama and French (2002)*, and *Farinha (2003)* who report negative coefficients for growth proxies. The coefficient corresponding to the leverage variable is always negative and significant at 1% level in all the models. This evidence confirms our

prediction that debt has a negative impact on dividends because of debt covenants and related restrictions imposed by debt holders. The size variable is seen to have a negative and significant impact on dividend payouts as in *Farinha (2003)* and *Harada and Nguyen (2006)*. Larger firms distribute fewer funds to their shareholders than small firms do. This evidence supports the argumentation of *Barclay et all. (1995)* that larger companies have more liabilities, because debt holders have more confidence in larger firms. Therefore, larger firms would pay out low dividend in order not to borrow even more capital. Quite surprisingly, free cash-flow seems not to matter for the payout decisions. The impact of free cash-flow proxy appears insignificant in any of the models reported in Tables 5 and 6. In Tunisian firms, the controlling shareholder holds the majority control in about 61.5% of cases. His empowerment gives him the incentive to extract private benefits and not share the free cash flow with minority shareholders.

[Insert table 5 about here]

Controlling owner's type and dividend payout

Table 6 summarizes the regression results of the relationship between the identity of the controlling shareholder and dividend payout ratios. We find that the coefficient of "family voting power" (model 4) is negative and statistically significant at the 10% level as predicted by Hypothesis 3. This finding indicates that the expropriation risk is more pronounced when a family holds the control of the firm. In Tunisian firms with high family ownership, the board of directors is dominated by the member of the family. Then, the corporate policies are in favour of their best interests. Their risk aversion and their incentive to transfer the corporate wealth to their descendent are the causes of a lower dividend payout ratio. On the other hand, families prefer their own funds to finance investment projects because they want keep the control of their firm. Our finding is in line with the results of *Oreland (2006)* for Swedish firms that show that family controlled firms pay lower dividends than firms with dispersed ownership. The author argues that families do set dividend policies according to their preferences (such as tax preferences).

Financial institutions voting power is seen to have a positive effect on the dividend payout ratio (the coefficient is significant at 10% level). In line with predictions of the free cash flow theory this result confirms that financial institutions act as sophisticated monitors. In our sample, majority owners from the financial sector are banks, investment funds and insurance companies. Banks are described in the literature as good monitors and a combination of equity ownership and debt claims can

reduce the shareholder-debtholder conflict. In Tunisia financial institutions like banks seem to serve positive role in corporate governance. This result is consistent with *Bena and Hanousek (2005)* who report that ownership by financial institutions in the Czech Republic is associated with a high target payout ratio (0.54).

Finally, the voting power of the state is negatively related to dividend payout ratio (although not significant). State-controlled firms can be viewed as manager-controlled since the CEO is the top manager and the president of the board of directors. Hence, he seeks his personal consumption (prestige, travels…) and his career. For these reasons he adopts a stable dividend policy with a low target payout.

[Insert table 6 about here]

5. Summary and conclusion

This study has examined empirically the relationship between the control structure and dividend payout using a panel of Tunisian corporate firms over 1998-2004. We advocate the use of Banzhaf indices as a relevant measure of voting power in the analysis of dividend policy.

Due to high concentration, the conflict between large and controlling owners and small outside shareholders is one of the main issues in the corporate governance literature. We find that voting power is one of the important variables which influence the dividend payout policies. Though, the relationship is different for different classes of owner and at different levels. Firms with a dominant majority owner distribute lower fraction of their benefits as dividends. In contrast, firms with multiple large shareholders that share the control pay often a higher dividend payout ratio. We interpret these results as evidence that dominant owners extract rents from firms and that strong other shareholders can prevent this behaviour. Furthermore, our results show that the identity of the dominant shareholder influences the dividend policy of Tunisian firms. The voting power of family and the state is associated with a negative effect on dividend-to-earning ratio. In contrast the presence of a strong institutional shareholder affects positively the payout ratio. The results support the hypothesis that the interest alignment between different classes of owners is one of the important factors influencing the dividend payout. Our findings indicate that dividend policy is not irrelevant as argued by *Miller and Modigliani (1961)*, but rather is a response for the preference of the large shareholders.

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Appendix

Table 1. Summary statistics for pooled sample (357 firm-years)s

	Mean	St.dev.	Min.	Max.
payout	0.51	0.28	0	1.17
fcf	0.12	0.11	-0.03	0.74
growth	0.14	0.31	0	4.31
debt	0.19	0.39	0	6.65
size	7.66	0.47	6.33	9.13

Table 2. Panel A: voting power of the three largest shareholders

Banzhaf indices	Mean	Std. Dev.	Min.	Max.
Bz1	0.71	0.277	0.263	1
Bz2	0.11	0.126	0	0.5
Bz3	0.09	0.097	0	0.33

Table 2. Panel B: voting power by owner type

Largest shareholder :	Number of companies	%	Mean of Banzhaf indices	St.dev	Min.	*Max.*
Family	22	43%	0.753	0.277	0.32	*1*
Financial inst.	21	41%	0.708	0.262	0.286	*1*
State	*8*	*16%*	*0.91*	*0.163*	*0.619*	*1*

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Table 3. Descriptive statistics of payout ratio (majority control-shared control)

Majority control : N= 32 (BZ1>0.5)		Shared control : N= 19 (BZ1≤0.5)		*t-test*	
Mean	Std. Dev.	Mean	Std. Dev.	diff	*t value*
0.48	*0.02*	*0.61*	*0.02*	*-0.13*	*(-4.45)****

*** denotes a significant at the 1% level.

Table 4. Panel A: descriptive statistics of payout ratio by owner type

Controlling shareholder	Mean	Std.dev	Min.	*Max.*
Fam.	0.476	0.289	0	*1.269*
Inst.	0.593	0.232	0	*1.118*
State	*0.492*	*0.313*	*0*	*1.123*

Table 4. Panel B: t-test between groups

Groups	Mean differences	Student-t
Fam - Inst	-0.117	-3.81***
Fam – State	-0.016	-0.36
Inst – State	0.10	2.58***

***, significant at 1%.

Table 5. The influence of voting power of dominant shareholders

Model 1 : $PAYOUT_{i,t} = \alpha_0 + \alpha_1 BZ_{1i,t} + \alpha_2 FCF_{i,t} + \alpha_3 GROWTH_{i,t} + \alpha_4 DEBT_{i,t} + \alpha_5 SIZE_{i,t} + \varepsilon_{i,t}$

Model 2 : $PAYOUT_{i,t} = \alpha_0 + \alpha_1 BZ_{2i,t} + \alpha_2 FCF_{i,t} + \alpha_3 GROWTH_{i,t} + \alpha_4 DEBT_{i,t} + \alpha_5 SIZE_{i,t} + \varepsilon_{i,t}$

Model 3 : $PAYOUT_{i,t} = \alpha_0 + \alpha_1 BZ_{3i,t} + \alpha_2 FCF_{i,t} + \alpha_3 GROWTH_{i,t} + \alpha_4 DEBT_{i,t} + \alpha_5 SIZE_{i,t} + \varepsilon_{i,t}$

Variables	Model 1		Model 2		Model 3	
	Estimate	z-statistic	Estimate	z-statistic	Estimate	z-statistic
Constant	1.36	3.76***	1.17	3.18***	1.23	3.32***
Bz1	-0.13	-1.72*	-----	-----	-----	-----
Bz2	-----	-----	0.37	1.96**	-----	-----
Bz3	-----	-----	-----	-----	0.33	1.35
FCF	0.23	1.33	0.23	1.36	0.20	1.19
GROWTH	-0.07	-1.63*	-0.07	-1.61*	-0.07	-1.60*
DEBT	-0.11	-3.12***	-0.11	-3.08***	-0.11	-3.08***
SIZE	-0.10	-2.07**	-0.09	-1.90*	-0.09	-2.00**
Nb. of obs.	357		357		357	
Wald test	$\chi^2(5)=19.21$***		$\chi^2(5)=20.89$***		$\chi^2(5)=18.43$***	
Hausman test (p-value)	0.20		0.26		0.30	
Adjusted R^2	0.23		0.24		0.20	

Note: Dependent Variable: Dividend Payout Ratio (PAYOUT)
*,**,*** denotes a significant at the 10%, 5% and 1% level, respectively.

Table 6. The influence of the identity of dominant shareholders

Model 4: $PAYOUT_{i,t} = \beta_0 + \beta_1 BZFAM_{i,t} + \beta_2 FCF_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 DEBT_{i,t} + \beta_5 SIZE_{i,t} + \varepsilon_{i,t}$

Model 5: $PAYOUT_{i,t} = \beta_0 + \beta_1 BZINST_{i,t} + \beta_2 FCF_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 DEBT_{i,t} + \beta_5 SIZE_{i,t} + \varepsilon_{i,t}$

Model 6: $PAYOUT_{i,t} = \beta_0 + \beta_1 BZSTATE_{i,t} + \beta_2 FCF_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 DEBT_{i,t} + \beta_5 SIZE_{i,t} + \varepsilon_{i,t}$

Variables	Model 4		Model 5		Model 6	
	Estimate	z-statistic	Estimate	z-statistic	Estimate	z-statistic
Constant	1.46	3.89***	1.29	3.56***	1.29	3.43***
BzFam	-0.10	-1.80*	-----	-----	-----	-----
BzInst	-----	-----	0.13	1.87*	-----	-----
BzState	-----	-----	-----	-----	-0.03	-0.46
FCF	0.16	0.93	0.13	0.76	0.17	1.00
GROWTH	-0.06	-1.58*	-0.06	-1.53	-0.06	-1.56*
DEBT	-0.11	-3.16***	-0.11	-3.18***	-0.11	-3.10***
SIZE	-0.12	-2.44**	-0.10	-2.20**	-0.10	-2.00**
Nb. of obs.	357		357		357	
Wald test	$\chi^2(5)=18.96$***		$\chi^2(5)=20.33$***		$\chi^2(5)=16.39$***	
Hausman test (p-value)						
Adjusted R^2	0.27		0.18		0.13	
	0.22		0.24		0.22	

Note: Dependent Variable: Dividend Payout Ratio (PAYOUT)
*,**,*** denotes a significant at the 10%, 5% and 1% level, respectively.

Computation of Banzhaf values – an example

Consider a company with the following ownership structure:

Shareholder	% of voting rights
A	25%
B	18%
C	12%
D	10%
Dispersed	35%

Shareholders have to vote "yes" or "no". Assume that dispersed is a continuum of infinitesimal players, the quota q is equal to $(1 – 0.35)/2 = 32.5\%$. Thus a coalition with voting rights more than 32.5% appears powerful in corporate decision process.

We have developed an algorithm that help us to compute the Banzhaf indices (Yes = 1; No = 0 and the outcome = refused or accepted)

A	B	C	D	Sum of voting rights	Outcome
0	0	0	0	0%	Refused
1	0	0	0	25%	Refused
0	1	0	0	18%	Refused
1	1	0	0	43%	Accepted
0	0	1	0	12%	Refused
1	0	1	0	37%	Accepted
0	1	1	0	30%	Refused
1	1	1	0	55%	Accepted
0	0	0	1	10%	Refused
1	0	0	1	35%	Accepted
0	1	0	1	28%	Refused
1	1	0	1	53%	Accepted
0	0	1	1	22%	Refused
1	0	1	1	47%	Accepted
0	1	1	1	40%	Accepted
1	1	1	1	65%	Accepted

Results

Number of possible strings		=	16
Number of swings for (A)		=	6
Number of swings for (B)		=	2
Number of swings for (C)		=	2
Number of swings for (D)		=	2
Total number of swings		=	12
BZ index (A)	= (6/12)	=	0.5
BZ index (B), (C) and (D)	= (2/12)	=	0.166