Ownership-Control Discrepancy and Dividend Policy:
Evidence from Tunisia

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Abstract

This paper examines the relation between the ownership-control discrepancy and dividend policy of Tunisian firms. Using data of 44 Tunisian firms, the current study provides evidence in support of the expropriation hypothesis. The empirical results show that the largest shareholder maintains a controlling power measured by Banzhaf index in excess of his cash flow rights which, leads to a low level of dividend payout ratios. In contrast, when the control power is shared between multiple large shareholders, Tunisian firms are likely to pay large dividends.

Keywords: Dividend policy, Ownership and control, Voting power, Agency conflicts, Banzhaf power index, Tunisia

1. Introduction

The corporate finance literature has traditionally focused on mitigating agency conflicts between managers and shareholders due to a separation of ownership and control (Jensen and Meckling 1976). Recent empirical studies have shown that in most countries publicly traded firms often have large shareholders, giving rise to another agency conflict between controlling shareholders and minority shareholders (LaPorta *et al.* 1999; Claessens *et al.* (2000, 2002); Faccio and Lang, 2002; Barca and Becht, 2002; Masulis *et al.* 2009; Jong *et al.* 2011). This observation contrasts with the Berle-Means thesis of the "widely held corporation" and indicates that several firms with controlling shareholders become more widespread through many countries around the world.The potential problems involved in large shareholders representing their own interests become particularly aggressive if their control rights are significantly more important than their equivalent level of cash flow rights.

According to Burkart and Lee (2008), the rule of one share-one vote is not the most practice of the relationship between ownership and control rights. Compared to North America, such deviations are more frequent in european companies. Gompers *et al.* (2007) observed that the fraction of listed companies with dual-class shares is about 22% on the Toronto stock Exchange. As noted by Bebchuk *et al.*(2000) such a radical separation of control and cash flow rights can occur in three main ways: (i) through dual-class share structures, (ii) stock pyramids, and (iii) cross-ownership. Regardless of how this separation is defined, the authors consider this pattern of ownership as a controlling-minority structure (CMS) because it allows a large shareholder to control company's decisions while holding a disproportionally small fraction of cash flow rights. We support this analysis by the additional form of CMS that takes into account coalition between shareholders. For a given ownership structure, a block representing 20% of the votes in a company, which has widely dispersed shareholdings is likely to yield effective control over the company with concentrated ownership (Crama *et al.* 2003). While a block of 25% in a company with a majority shareholder may not give its holder significant influence (Trojanowski and Renneboog, 2005).

There are abundant empirical literatures showing that minority investors of firms in which the controlling shareholder holds control rights in excess of his/her cash flow rights are vulnerable to an expropriation problem. Earlier studies indicate that excess control generally implies higher earnings management, a transfer of resources from the firm to the controlling shareholder through self-dealing transactions (Johnson *et al.* (2000)) and value

discount (Claessens *et al.* (2000), La Porta *et al.* (2002)), and decreasing dividend (Faccio *et al.* 2001, Gugler and Yurtoglu 2003, chen *et al.* 2005, Mancinelli and Ozkan 2006).

According to Faccio *et al.* (2001), dividends play a crucial role in limiting the power of top management and their expropriation activities and consequently remove corporate wealth from insider control to outsider shareholders. Maury and Pajuste(2002) advanced two justifications of the agency problem of dividend policy: (i) The first view considers dividends as an outcome of the agency conflicts between insiders and outsiders as well as between blockholders and minority shareholders. Under such conditions the level of dividend payout depends on shareholders' legal protection. In countries with the strongest protection (Common-law), firms distribute higher dividends than in countries with poor protection (civil law). (ii) The second approach argues that dividend policy and governance mechanisms are substitute devices to control insiders' opportunism and entrenchments.

Using a dynamic panel data of U.K firms, Trojanowski and Renneboog (2005) analysed the effect of control structure on target payout ratio. They found that controlling shareholders are concerned with the trade-off between the risk of underinvestment and the agency problems of free cash flow. The empirical tests showed that voting power of shareholders' coalitions and dividend are negatively correlated and the level of this relationship differs across different categories of blockholders. Based on a sample of 8279 firms from 37 countries, Truong and Heaney (2007) examined the possible interaction between dividend policy and the type of the largest shareholders. They showed that firms are likely to pay fewer dividends when the large owner is either an insider or a financial institution. Baulkaran (2009) propose three motivations based on reputation, private benefits and family legacy to explain the effect of agency problems and private benefits on firm's dividend behaviour.

This paper focuses on the effect of the conflicts of interests between majority shareholders and minority shareholders on firms' dividend policy. It complements the existing empirical literature in two ways. (i) First, we investigate the effect of separation between ownership and control on Tunisian firms' dividend policy. (ii) Second, we advocate the use of Banzhaf index, derived from game theory as a relevant measure of voting power in the analysis of the relationship between dividend and control of the largest blockholder for each class of ownership-control structure.

The remainder of this paper is organized as follows. Section 2 reviews the literature regarding the relationship between dividend payout and controlling minority structure. Data, methodology and descriptions of variables are presented in section 3. Our empirical results will be discussed in section 4. Section 5 concludes.

2. Literature Review

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). Payment of dividends reduces the discretionary funds available for managers for perquisite consumption. Grossman and Hart (1980) and Jensen (1986) showed that firms pay dividend to mitigate agency costs of equity which considerably reduce free cash flow available to managers. This phenomenon has since become known as a principal-agent puzzle which may be less important when controlled blockholders monitor firms on behalf of minority shareholders.

In recent years, several empirical studies have shown that ownership structures of many firms are significantly concentrated. Research in this area has tended to resolve focal questions like how conflicts of interests between insiders and outsiders affect financial decisions and firm value? What are the best mechanisms which minimise risk of expropriation? In this context, La Porta *et al.* (1999) used data on ownership structure of large firms in 27 countries.They showed that, except in countries with stronger shareholders protection (like USA and UK), few of these corporations are widely dispersed (45% of the large and medium sized firms are owned by families). Their empirical investigations suggest that ownership and control can be separated in favour of controlling shareholders at the expense of minority shareholders.

As proposed by Shleifer and Vishny (1997), when large shareholders effectively control the firm, they start diverting funds toward private benefits that are not shared by other stockholders. Controlling shareholders may pay themselves excessive compensation, the power to elect board members, the ability to consume perquisites and to transfer resources at the expense of the firm and minority shareholders (Grosman and Hard, 1988; Harris and Raviv, 1988; Maury and Pajuste, 2010). Therefore, the relevant agency problem is expropriation of minority shareholders by the large shareholders. Expropriation of non-controlling shareholders is conducted in many different ways including dividend (Faccio *et al.* (2001)). Thus, if earnings are not distributed to stockholders as dividends, they will increase the amount of free cash flow that could be diverted by insiders to their private consumption. As explained by La Porta *et al* (2000, page 2) "failure to disgorge cash leads to its diversion or waste, which is detrimental to outside shareholders' interest".

Holderness *et al.* (2000) show that dividend payout is higher in firms with diffused ownership than in firms of similar size but with large shareholders. The empirical tests conducted by Faccio *et al.* (2001) suggest that corporations that are "tightly-affiliated" pay significant higher dividends to a business group via a chain of control that possesses at least 20 percent of the control rights at each link, and amongst such corporations, to those having a lower ownership to control ratio. By contrast, for corporations not tightly affiliated to a group, a lower ownership to control ratio is associated with significantly lower dividend ratios.

Maury and Pajuste(2002) analyze the effect of the ownership/control structure on dividend policy in Finish listed corporations. They find that firms become less likely to pay dividends when the total stake held by the blockholders represents a significant portion of the equity ownership. In the German context, Gugler and Yurtoglu (2003) show that lower dividend payout of majority-controlled firms is related to the probability that controlling shareholders extract private benefits at the expense of minority shareholders. Using cross-sectional sample of Czech firms, Bena and Hanousek (2008) showed that concentrated shareholders extract private benefits at the expense of the small shareholders. For Tunisian firms, Guizani *et al.* (2008) and Kouki and Guizani (2009) find that the voting power of the largest shareholder is associated with low payout ratios. Furthermore, firms with majority control distribute low fraction of their benefits as dividend then their counterparts with shared control.

A crucial feature arising from the principal-agent issues is that agency problems are more severe when the separation between control rights and cash flow rights is much more important.According to Bebchuk *et al.* (2000), a controlling minority structure (CMS) has the potential of creating large agency costs. This structure combines two agency costs related respectively to conflicts between shareholders and managers and those related to conflicts between majority shareholders and minority shareholders. The former costs are likely to be dropped because shareholders do participate in managing the firm, while the latter costs are growing because controlling shareholders are indeed likely to manage the business for their own interests at the expense of minority shareholders' wealth.

Using a panel data of 309 Swedish listed firms, Cronqvist and Nilsson (2003) showed that the controlling minority shareholders structures with dual-class shares are more used by family stockholders than other categories of investors. According to Bena and Hanousek (2008), controlling shareholders have two effects on firms: (i) they are motived to monitor management's behaviour and performance in order to ensure that shareholders'wealth is maximised. (ii) Their behaviour is characterized by the possibility to extract benefits of control at the expense of minority shareholders. The authors tested these hypotheses in a weak legal protection context of an emerging economy. They find that the presence of significant minority shareholder is associated with higher level of target payout ratio and hence prevents large blockholders from extracting private benefits.

The study conducted by How *et al.* (2008) examined the relationship between dividend policy and ownership and control structure in Hong Kong. For a sample of family controlled firms, the authors showed that higher dividend payouts are distributed when the size of family-controlled firms are small or medium. However when discrepancy between the controlling shareholder's cash flow right and voting rights is significant, large family-controlled firms are more likely to decrease dividend payout ratio.

Boulkaran (2009) analyses the association between dividend policy and the opportunity to expropriate wealth from minority shareholders for two classes of ownership structures (single and dual class).The empirical tests are conducted on US firms in order to test three potential explanations of controlling shareholders behaviour: reputation, private benefits and family legacy. The results showed that single class companies pay out more cash dividend compared to dual class. The tests showed as well that dividend payout ratio decreases as the separation between control and cash flow rights is higher.

De Cesari (2010) tests the hypothesis that payout policy is used in poor governed companies in order to mitigate corporate agency conflicts. Using a sample of Italian firms, the author shows that (i) dividends are positively associated with a discrepancy between voting and cash flow rights of the dominant shareholders (ii) the level of dividend ratio decreases when cash flow rights of the controlling shareholder increase.(iii) dividend payout is lower for family-controlled firms than for other concentrated companies.

Jong *et al.* (2011) advanced two explanations of the possible relationship between dividend payout and the separation ownership-control rights. (i) The first argument considers the expropriation hypothesis which assumes a negative relationship between controlling shareholders and dividend payout. (ii) The substitution hypothesis (free cash flow hypothesis and dividend signalling model) assumes that stock market reacts negatively to expropriation risk. In this case, a dominant shareholder who focuses more attention on the company's reputation wants to commit stable or generous dividend in order to maximise firm value.

3. Data and Methodology

3.1 Sample

The selection of our sample is based on 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 financial market council (FMC). We have excluded companies whose financial information is incomplete during the period of analysis. We therefore construct a sample of 44 companies with data for the years 1998 through 2007, in a total of 440 observations. It includes 23 financial firms, 15 industrial firms and 13 service firms.

3.2 Variables Construction and Hypotheses Development

Dependent variable:

The dependant variable, Payout is the dividend payout ratio measured as the ratio of dividends to earnings. Dividend is cash dividend and earnings are measured after taxes and interests. The cash dividend ratio was chosen to describe dividend behaviour since Tunisian firms are less likely to use stock repurchase.

Explanatory variables:

Discrepancy between ownership and control (OWCONT): we use the ratio of ownership rights as measured by the number of shares held by the major shareholder (OW1) deflated to control rights as measured by voting power of the controlled shareholder (BZ1). This ratio is the inverse of the discrepancy between control and ownership. If the expropriation hypothesis is correct, which reflects high discrepancy and equivalent to verify small value of OWCONT, then we expect ownership to control rights to be positively related to dividend payout. This relationship is equivalent to having negative effect of the inverse of the OWCONT ratio.

Several studies document the complex and ambiguous measure of voting rights when firm's ownership structure is made of different classes of shares (single class, dual class…).

How to Measure voting power?

According to Trojanowski (2004), and Renneboog and Trojanowski (2005), a number of empirical studies have computed voting power by the size of the stake controlled by different blockholders. In such case, a shareholder with 30% of votes in widely held corporation is more likely to practice an effective control over the firm, while a shareholder with 35% of vote in firm with greater controlling blockholders does not hold sufficient rights to exercise significant influence over management decisions. The main problem with such a measure is that does not compute the set of all possible coalitions between large shareholders. Crespi and Renneboog (2003) propose that is better and more accurate to consider the relative rather than the absolute voting power rights of a given of shareholder, which determines his/her capacity to extract private benefits of control at the expense of minority investors. Many recent approaches explore the formation of coalitions between the main blockholders in order to have direct access to the private rents of control. The approach proposed here is to use the game theory to compute the formal power represented by the shareholder votes.

The idea is to consider large shareholders as a players in a voting games, in which each voter compute all the possible coalitions that he/she can build with other players. According to Banzhaf (1965), Leech (1988), Crama *et al*. (2003), we use Banzhaf power index as the measure of the voting power of the controlling shareholders. Specifically, the coalition underlying this model is calculated by the number of swings for player i as a proportion of the number of potential swings where his vote is decisive in such coalition. The Banzhaf swing probability is computed as follows (appendix2):

$$BZ_i = n_i / 2^{n-1} \quad , \quad i = 1,2,3.......n \tag{1}$$

Where, n_i is the number of swings for player i.

Free cash flow (FCF): Besides, dividend payout ratio is also determined by other variables. Jensen's (1986) free cash-flow hypothesis suggests that if firms have cash in excess of their requirement of investment in positive-NPV projects, it is better to pay these funds as dividends in order to reduce managerial discretionary behaviour and thus avoid agency costs of free cash-flow. Rozeff (1982), Jensen *et al.* (1992) and Mollah *et al.* (2000) support this hypothesis, thus we predict a positive relationship between free cash-flow and dividend payout ratio. This variable is measured as operating cash flow minus capital expenditure and change in working capital deflated by total assets.

Past growth (Growth): As the choice of payout policy cannot be separated from investment opportunities available to the firm, our model predicts a negative relationship between past growth and dividend payout ratio since firms

prefer to avoid transaction costs due to external financing. According to pecking order theory, we can expect firms to pay fewer dividends if they experienced past growth. Previous studies such as Rozeff's find that dividend policy is negatively influenced by firm's past growth. As Rozeff (1982), we measure past growth by the average of the historical sales growth for the 1998-2007 periods.

Cost of debt (KDebt): Agency conflicts can exist also between shareholders and debtholders. Shareholders can expropriate wealth from debtholders by paying themselves high dividends. Bondholders try to contain this problem through restrictions on dividend payment in the bond commitments (Kalay (1982); Smith and Watts (1992)). Debtholders can impose high level of interests for firms paying high dividends. Therefore, we expect a negative relationship between payout ratio and cost of debt. This variable is defined as the financial expenditure deflated by total bank debt.

Profitability (ROA): Consistent with a signalling perspective (Miller and Rock (1985)), dividend payout may correlate positively with profitability. Jensen *et al.* (1992) find evidence of a positive association between return on assets (ROA) and dividend payouts. This variable is defined as the mean ratio between after-tax earnings before extraordinary items and total assets.

Therefore, according to the agency problems related to the behaviour of the controlling shareholders, we propose our main testable hypotheses as follows:

Hypothesis 1:«excess of control rights over cash flow rights of the controlling shareholder has a negative effect on the dividend payout ratio».

Hypothesis 2 "voting power is more likely to affect dividend policy when the largest shareholder is belonging to the controlling minority structure (CMS).

3.3 Regression Specification and Estimation Methodology

Based on predictions of finance theory and our earlier discussion, we consider the empirical model described below (model 1):

$$Payout_{it} = \alpha_0 + \alpha_1 OWCONT_{it} + \alpha_2 FCF_{it} + \alpha_3 Growth_{it} + \alpha_4 KDebt_{it} + \alpha_5 ROA_{it} + \varepsilon_{it} \qquad (2)$$

Where Payout is dividend payout ratio, OWCONT is ownership to control ratio, FCF denotes free cash flow ratio, Growth is past growth of the firm, KDebt is cost of debt, and ROA is return on assets,

The estimation of the proposed model is conducted on a panel data. According to Baltagi (2005), panel data gives multiples solutions to many problems related to cross-sectional specification like unobserved heterogeneity, degrees of freedom, dynamics and collinearity among the explanatory variables. In order to choose the appropriate specification, panel data methodology offers two tests namely the F-statistics and the Hausman's specification test. The former measurement tests the null hypothesis that the adequate estimator is OLS regression compared to individual effects model, while the latter statistic tests the null hypothesis that the random effects regression is appropriate compared to the fixed effects models.

For our results (Table 2), the F-statistic is significant at 1% level which indicates an existence of specific effects in our data. The second step consists of specifying the individual effects: a random effect or a fixed effect. The Hausman test gives a value of 4.84 with a p-value of 0.44 which indicates that the random effects are appropriate for our sample.

4. Empirical Results

4.1 Descriptive Statistics

Before proceeding to a more detailed analysis of the payout policy of Tunisian firms over the period 1998-2007, we present some preliminary results concerning the dividend-to-earnings ratio for firms with different control structures.

Table 1 summarizes the key characteristics of the sample firms. The results show that average free cash flow is 15% of total assets which indicates 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, cost of debt and profitability proxies equal 11%, 7% and 5% respectively.

Insert Table 1 Here

Table 1 illustrates also the voting power (as measured by Banzhaf index, BZ1), the fraction of shares and the ownership to control ratio of the largest shareholder. Interestingly, we notice that the voting power of the largest shareholder is quite high (76%) making him/her very powerful. He/she holds 46% of the shares which give a mean

value of the OWCONT ratio of 61%, which gives an average gap about 1.65 between control and ownership of the largest shareholder (control rights = 1.65 cash flow rights). These results show that ownership in Tunisian firms is concentrated and control is often in the hand of the first largest shareholder.

4.2 Test of the Effect of Ownership to Control Ratio on Dividend Policy

In this section, we present the regression results of dividend-to-earnings ratios on ownership to control ratio and other control variables in a sample of 44 Tunisian firms. The model is estimated under random effects.

The results are presented in Table 2. From these results we can derive the following conclusions:

- As predicted by our main hypothesis (*H1*), the influence of the ownership to control ratio of the largest shareholder (OWCONT) on dividend payout rate is significantly positive. Indeed, the more this ratio is high, the more the control is low, the company will distribute more significant portion of its profits to shareholders. In contrast, if the largest shareholder has a controlling power that exceeds his/her cash flow right, the retention of profits outweighs the dividend distribution as previously discussed. This result shows that when the largest shareholder holds full control without a majority of shares, he/she extracts private benefits at the expense of minority shareholders. This pattern is consistent with the claim made by Shleifer and Vishny (1997), that the dominant shareholder prefers to extract private benefits rather than receive dividends that equally benefit minority shareholders. In addition, the largest shareholder, since he/she is poorly diversified and risk averse, prefers an internal finance over an external one like bank debt which increases the firm's default risk or equity issue which dilutes his/her control. The results are also consistent with Faccio *et al.* (2001) who find that for firms tightly-affiliated to a group at the 20 percent level control, there is a significant positive relationship between OWCONT and dividends. Gugler and Yurtoglu (2003) also report that majority controlled firms in Germany have lower payouts. Elsewhere, Maury and Pajuste (2002) find that dividend payout ratio is negatively related to the control stake of the controlling shareholder in Finnish listed firms.

- In line with earlier expectations, firms that experienced a higher rate of free cash flow (FCF) pay more dividends. This is consistent with the free cash flow hypothesis of Jensen (1986) which indicates that when a firm has cash in excess of what is required to finance positive-NPV investment project, it is better for managers to return the excess cash to shareholders as dividends in order to maximize shareholders wealth.

- The coefficient associated to past growth (Growth) rate is negative but not statistically significant (a coefficient of – 0.06 with probability of 0.16). This result, however, supports the transaction costs effect of external financing as suggested by Rozeff (1982). Firms that experienced a higher rate of annual growth pay fewer dividends in order to avoid transaction costs of external financing as predicted by pecking order theory.

- The cost of debt (KDebt) has a negative and significant effect on dividend payout ratio. As this cost increases with 1%, the dividend rate decreases with 2.66%. Debtholders impose higher interest rate for firms paying higher dividends in order to limit wealth transfer via dividend to shareholders. This evidence confirms our prediction that debt has a negative impact on dividends because of debt covenants and related restrictions imposed by debtholders as suggested by Kalay (1982) and Smith and Warner (1979).

- The profitability variable (ROA) is seen to positively and significantly influence dividend payouts. Firms pay higher dividend when they realize a comfortable financial situation. This relationship is consistent with the results of Kowalewski *et al.* (2007) in the context of Poland.

Insert Table 2 Here

4.3 The Effect of Discrepancy Ownership-Control on Dividend for Each Class of Shareholders

The previous study is complemented by the analysis of the effect of the control of the largest shareholder on dividend policy. As we have suggested, the power of the largest shareholder in the company does not necessarily reflect its capital ownership but it is more related to the structure of the power among the principal stockholders. Therefore a shareholder may have a higher control in the company without having the majority of legal actions. This difference is remarkable when incentives for expropriation are more pronounced when controlling shareholder's control exceeds its cash flow right.

The data analysis allowed us to distinguish three groups of firms (Table 3):

- In the first group (SHARE), the largest shareholder holds shares less than 50% of the capital and a power control below 50%. The control of these firms is shared among several major shareholders. This group represents 34.09% of the total number of firms.

- The second group (*CMS: "Controlling Minority Shareholders"*) consists of companies in which the dominant shareholder owns a percentage of shares less than 50% but its power of control (as measured by the Banzhaf index) exceeds 50%. This group represents 27.27% of the total number of firms.

- Finally, in the third group (MAJ), the largest shareholder holds the majority stake (more than 50% of shares) and thereafter the majority of voting rights. This group represents 38.64% of total number of firms. Table3 summarizes the distribution of the sample between the couple cash flow right and voting right.

Following CMS and MAJ groups, the principal shareholder holds full control in 65.91% of cases where voting power exceeds 50%.

Insert Table 3 Here

The descriptive statistics of firms' financial variables show crucial differences between classes of shareholders. In table 4 panel A, we report descriptive statistics on the dividend payout ratio for three sub-samples-firms with majority control ($OW1 \succ 50\%$ and $BZ1 \succ 50\%$), firms with controlling minority structure ($OW1 \prec 50\%$ and $BZ1 \succ 50\%$), and firms with shared control ($OW1 \prec 50\%$ and $BZ1 \prec 50\%$). The results show that firms controlled by multiple large shareholders pay more dividend (57.3% of their benefits) compared to their counterparts that are majority controlled (46.7%) and with controlling minority structures (45.2%). This result is a priori of an efficiency indicator of sharing control as suggested by Gomes and Novaes (2001).

Insert Table 4 Here

We also present t-statistics for differences in mean values of dividend payout ratios between groups of firms according to cash flow rights and control rights of the largest shareholder. Panel B of table 4 summarizes the mean tests between groups. The t-statistics for the difference between dividend payout ratios in firms with majority control (MAJ) and firms with controlling minority structure (CMS) compared to firms with shared control (SHARE) are negative and statistically significant at 1% level. This result suggests that when the principal shareholder holds full control, firms pay lower dividends. This finding indicates the possibility of expropriation of minority shareholders. In fact, when the large owner is unambiguously in control, he/she may extract private benefits that are not shared with minority shareholders. The presence of multiple controlling blockholders increases dividend payout ratios. This result indicates that multiple large shareholders are beneficial to minority shareholders.

The results of descriptive statistics reported in Table 5 show that companies whose control is shared between several shareholders release a higher level of dividend. With more than 50% of voting power in the company, it seems that the main shareholder is likely to limit dividend flow. Indeed, payout ratios identified by the group CMS and MAJ are respectively equal to 50% and 48%. Moreover, the comparison among the three groups of firms based on their ownership structure and control shows a strong concentration of the main shareholder. This latter holds for the CMS group a controlling power (80%) which exceeds its ownership right (34%).In addition, the average values of other variables are similar for both groups in contrast to those of the SHARE group.

Insert Table 5 Here

The econometric tests of control rights on dividend policy are performed in one stage: we examine the impact of the level of control of the main shareholder on dividend payout for the three groups of firms separately. Model 2 (equation 3) to be tested is consistent with the above model 1 (equation 2), but we have replaced discrepancy variable with the voting power of the largest shareholder (BZ) for each class of ownership structure (SHARE, CMS, MAJ).

$$Payout_{it} = \lambda_0 + \lambda_1\,BZ1_{it} + \lambda_2\,FCF_{it} + \lambda_3\,Growth_{it} + \lambda_4\,KDebt_{it} + \lambda_5\,ROA_{it} + \varepsilon_{it} \qquad (3)$$

Where BZ1 is the benzhaf index which measures voting power of the principal shareholder. We expect a negative relationship between BZ1 and dividend payout. This effect is more likely to be verified in a controlling minority structure (CMS). The estimation results performed on the three groups of firms are listed in Table 6:

Insert Table 6 Here

Our objective is to test whether the detention of control power over ownership rights reduces the dividend ratio of the firm. From a financial point of view, the statistical tests performed on selected groups of companies provide interesting results. Indeed, according to hypothesis 2, the main shareholder has a negative effect on the level of dividend when it has a controlling power that exceeds 50%.

The coefficients of the variable BZ1 are respectively - 0.22 and - 0.70 for groups and CMS and MAJ and are significant at 10% level. However, when power control does not exceed 50%, the coefficient is positive and insignificant. This could be explained by the importance of shared control in making financial decisions. Under these conditions, the opportunistic behavior of the controlling shareholder is mitigated by the presence of other

important shareholders. In contrast, if ownership structures stimulate holding more control power (the minority shareholders do not hold enough shares to vote decisions contrary to that taken by the majority shareholder), the personal goals of the dominant owners may deviate with respect to the minority shareholders maximizing objective.

5. Concluding Remarks

This study empirically examined the relationship between ownership and control discrepancy of the largest shareholder and dividend payout using a panel of Tunisian corporate firms during 1998-2007. We advocate the use of Banzhaf index as a relevant measure of voting power during analysis of control rights.

Due to divergence between cash flow rights and control rights, the conflict between large and controlling owner and small outside shareholders is one of the main issues in corporate governance literature. We find that the OWCONT ratio is one of the important variables which influences dividend payout policies. As the largest shareholder holds a degree of control (measured by Banzhaf index) that exceeds his ownership (measured by his fraction of shares), firms tend to pay fewer dividends. In contrast, firms with multiple large shareholders that share control pay often a higher dividend payout ratio. We interpret these results as evidence that the dominant owner extract rents from firms and that strong other shareholders can prevent this behaviour.

Furthermore, our results show that free cash flow, cost of debt and profitability influence Tunisian firms' dividend policy. As suggested by Jensen (1986) and Kowalewski *et al.* (2007), firms pay higher dividend when they have important free cash flow and achieve high profitability. However, they avoid a large distribution when debtholders require a high interest rate. In sum, 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 large shareholders (Barclay *et al.* 2009). Our analysis would have been more interesting if the effect of other class equity (dual class stock, stocks pyramids) are considered but the lack of information ensures that we leave this challenging question for future work and for other stakeholder-oriented governance regimes.

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Table 1. Summary statistics for pooled sample (440 firm-years)

Variables	Mean	St.dev.	Min.	Max.
Payout	0.50	0.29	0	1.79
FCF	0.15	0.16	-0.03	0.99
Growth	0.11	0.28	-0.24	4.31
KDebt	0.07	0.12	0.04	0.12
ROA	0.05	0.06	-0.21	0.34
Bz1 (control)	0.76	0.27	0.26	1
OW1 (ownership)	0.46	0.22	0.11	0.90
OWCONT	0.61	0.20	0.22	1.03

Table 2. The influence of ownership-control discrepancy on dividend payout (Random effect model)

Variables	Estimate	z-statistic	[95% conf. interval]	
Constant	0.50	3.65***	0.2307	0.7674
FCF	0.24	2.09**	0.0144	0.4581
Growth	-0.06	-1.41	-0.1423	0.0233
KDebt	-2.66	-1.85*	-5.4693	0.1542
ROA	0.59	2.14**	0.0501	1.1211
OWCONT	0.22	1.85*	-0.0129	0.4549
Nb. of obs.	440			
Wald test	22.63***			
Hausman test	4.84			
Breusch-Pagan test	137.64***			
R2 between	27.5%			

*,**,*** denotes significant at the 10%, 5% and 1% level, respectively.

Table 3. Groups of firms according to ownership and control of the largest shareholder.

Group	Frequency	Number of obs.	Percentage (%)
OW1 (+50%), BZ1 (+50%) : MAJ	17	170	38.64%
OW1 (-50%) , BZ1 (+50%) : CMS	12	120	27.27%
OW1 (-50%) , BZ1 (-50%) : SHARE	15	150	34.09%
Total	44	440	100%

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

Group	Mean	Std.dev	Min.	*Max.*
MAJ	0.467	0.28	0	*1.12*
CMS	0.452	0.31	0	*1.79*
SHARE	*0.573*	*0.27*	*0*	*1.23*

Table 4. Panel B: t-test of payout ratio between groups

Groups	Mean differences	Student-t
MAJ - CMS	0.015	0.44
MAJ – SHARE	-0.106	(-3.44)***
CMS – SHARE	-0.121	(-3.43)***

***, significant at 1%.

Table 5. Descriptive statistics of each class of shareholder

Variables	SHARE		CMS		MAJ	
	Mean	Std.dev	Mean	Std.dev	Mean	Std.dev
Payout	0.57	0.30	0.50	0.23	0.48	0.30
FCF	0.08	0.08	0.14	0.15	0.14	0.15
Growth	0.17	0.49	0.13	0.19	0.12	0.20
KDebt	0.067	0.10	0.072	0.11	0.07	0.13
ROA	0.055	0.07	0.045	0.065	0.052	0.055
Bz1	0.40	0.09	0.80	0.20	0.98	0.07
OW1	0.28	0.10	0.34	0.08	0.66	0.12

Table 6. Effect of voting power of the largest shareholder for each class of ownership-control

	SHARE		CMS		MAJ	
	Coefficient	t-student	Coefficient	t-student	Coefficient	t-student
Constant	1.43	(2.99)***	1.41	(3.07)***	1.75	(3.26)***
FCF	0.63	(1.77)*	0.02	0.10	1.02	(5.92)***
Growth	-0.07	-1.22	-0.25	(-2.35)**	-0.08	-0.62
KDebt	-2.06	(-1.63)*	-2.98	(-1.95)*	(-2.46)	(-1.79)*
ROA	0.75	(2.36)**	0.42	(2.08)**	0.48	(2.25)**
Bz1	0.07	0.21	-0.22	(-1.75)*	-0.70	(-1.81)*
Adjusted R^2	17.57%		24.60%		36.42%	
Fisher statistic	(5.05)***		(7.27)**		(12.11)***	
Number observ	150		120		170	

*,**,*** denotes significant at the 10%, 5% and 1% level, respectively.

Appendix: Computation of Banzhaf values

Consider a company with the following ownership structure and control rights:

Table 7. Example of ownership structure and control rights:

Shareholder	Legal voting rights(one share = one vote)
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, quota q is equal to $(1 - 0.35)/2 = 32.5\%$.

Thus a coalition with voting rights more than 32.5% appears powerful in a corporate decision process.

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

Table 8. Algorithm Details.

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 = 6.

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.