

Large Shareholders' Activism Quality and Dividend Smoothing Behavior

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Abstract

This paper investigates the association between the large shareholders' activism quality and dividend smoothing behavior in the Tunisian context. Based on the agency and signalling theory predictions, it considers the effect of two conflicting model of dividend: the outcome and the substitute model. Using a sample of 44 companies making public offering over the period 1998-2009, the empirical evidence shows that dividend policy is the result of large shareholders' preferences. Particularly, we find that the degree of dividend smoothing engaged by minority-controlled firms is more than the majority -controlled firms. Likewise, the degree of dividend smoothing engaged by financial institutions-controlled firms is more than the family-controlled firms and the state-controlled firms. Taken together, the results are consistent with the outcome model of dividend policy.

Keywords: Dividend Smoothing, Corporate Governance, Controlling Shareholders, Activism, Substitute Model, Outcome Model.

1. Introduction

Lintner (1956) surveys managers on their attitudes toward dividend policy. He concluded that dividends are sticky, tied to long-term sustainable earnings, paid by mature companies, smoothed from year to year, and that managers target a long-term payout ratio when determining dividend policy. Lintner's conclusions were later confirmed by empirical studies (Fama and Babiak, 1968; Baker et al. 1985 Brav *et al.* 2005).

Leary and Michaely (2010) note, "While both survey evidence and empirical evidence suggest that dividend smoothing is a very important ingredient of payout policy, Lintner's study and subsequent studies left almost unanswered the question of what determines a firm's propensity to smooth". Furthermore, as Lau and Wu (2010) suggest, while the literature documents indicate the presence of dividend smoothing, few studies explore the cross-sectional variation in firms' dividend smoothing and their associated firm characteristics.

Theories of dividend smoothing are primarily based on either asymmetric information (Kumar, 1988; Guttman *et al.* 2007; Leary and Michaely, 2010) or agency considerations (Fudenberg and Tirole, 1995; Allen *et al.* 2000).

Models derived from asymmetric information show that firms facing more uncertainty and greater information asymmetry will tend to smooth more. The agency models' implications are that firms with severe conflicts of interest will smooth more.

Dividend smoothing is prevalent (Lintner, 1956; Fama and Babiak, 1968; Choe, 1990). Brav *et al.* (2005) finding that the tendency to smooth dividends has increased over time. Based on a comparison between Japanese firms and US firms, Dewenter and Warther (1998) report that firms which face lower information asymmetry and conflict of interest (Japanese firms member of keiretsu) tend to smooth less. Using data from the UK, Michaely and Roberts (2006) argue that agency and information asymmetry concerns play an important role in the determination of dividend smoothing behavior. Particularly, they find that dividend smoothing is more pronounced in public firms relative to private firms where agency problems and information asymmetry are more prominent.

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Inspired by agency theory arguments, La Porta *et al.* (2000) have established two models of the relation between a firm's corporate governance quality and its payout policy: the outcome model and the substitute model. Under the first model, dividends are the outcome of an effective system of legal protection of shareholders. The authors claim that under an effective system, minority use their legal power to force firms to pay out dividends. As suggested by Adjaoud and Ben-Amar (2010), according to this model, corporate governance quality should be positively related to dividend payouts since better governed-firms offer stronger protection rights to shareholders. It also implies that other things equal, dividends are sticky and are less sensitive to changes in current earnings. Contrary to this view, the second model argues that dividend payout policy is a substitute for governance problems in a firm (La Porta *et al.* 2000; Gomes, 2000; Maury and Pajuste, 2002). Under this model, corporate governance quality should be negatively related to dividend payouts in a way that better governed-firms are less likely to use dividends as a device to mitigate agency conflicts opposing managers to shareholders (John and Knyazeva, 2006; Adjaoud and Ben-Amar, 2010). It implies that firms are more willing to change or omit dividends, and are more responsive to changes in current earnings.

This paper derives the empirical implication of the two agency models on dividend smoothing behavior and empirically investigates the differences in firm's large shareholders activism as a determinant of dividend smoothing. The research complements the existing literature in two ways. First, it specifically focuses the attention on exploring the topic of dividend smoothing behavior. In particular, it investigates the relationship between firms' control structure and the Speed of Adjustment (SOA). Second, by studying the impact of controlling shareholders on dividend smoothing, it provides evidence on the governance role of dividend.

The remainder of this paper is organized as follows. Section 2 reviews relevant literature on the two agency models of dividend and develop hypotheses. Section 3 explains the research methodology. Section 4 describes the data and presents descriptive statistics of the sample. Section 5 discusses the empirical results and section 6 concludes the paper.

2. Theoretical Background and Hypothesis Development

2.1. Controlling Shareholders, Agency Costs and Information Asymmetry

Large shareholders activism can differ dramatically according to the identity of large shareholders and the level of their control. While the paper discusses the voting power of largest shareholders and the coalition formation between these shareholders in detail in section 3, it outlines the differences in large shareholders' activism here to provide a context for the development of the hypotheses. Firms are classified into two typologies with regard to the voting power of largest shareholders. The first typology distinguishes between majority-controlled firms and minority-controlled firms.

Majority-controlled firms are defined as firms in which the first largest shareholder holds the majority of voting power (more than 50%). According to Shleifer (1986), large shareholders limit the extent to which managers can act in their own interests. Large owners (blockholders) may play a valuable role by reducing Agency Problem I. But recent research has emphasized that large block holdings exacerbate Agency Problem II. Large shareholders prefer to generate private benefits of control that are not shared by minority shareholders. Gugler and Yurtoglu (2003) argue that the large-small shareholder conflict is more severe in majority-controlled firms. Empirical findings of Byun (2007) show that information asymmetry is positively associated with concentrated ownership. The private information of concentrated ownership may increase information asymmetry between controlling shareholders and minority shareholders.

Minority-controlled firms are defined as firms with the control shared between multiple large shareholders (the largest shareholder has less than 50% of voting power). Several recent studies show that firms with strong governance are those with shared control. According to Edwards and Weichenrieder (1999), other large shareholders have an incentive to control and monitor the largest shareholder, and the ability to do so. Gomes and Noveas (2005) argue that sharing control protects minority shareholders while preserving valuable private

benefits of control. Bloch and Hege (2001) argue that the presence of multiple shareholders reduces private benefits through competition for control. Maury and Pajuste (2005), Laeven and Levine (2008) and Attig *et al.* (2009) support the argument that the presence of multiple large shareholders with comparable voting power is associated with a valuable governance role.

Second, firms are grouped according to the types of the controlling coalition. Firms are classified into family-controlled, financial institution-controlled, and state-controlled. According to Michaely and Roberts (2006), these groups are not only differentiated by their ownership structure, but also by the degree of information asymmetry between the firm's managers and outside shareholders, as well as the potential for agency conflicts between these stakeholders.

Family-controlled firms are defined as firms in which the controlling members are tied by blood or marriage. In an agency perspective, Gadhoun (2000) argues that the most agency problem in family-controlled firms is the conflict of interests between non-family and family members. Filatotchev *et al.* (2005) argue that family control over the board may lead to greater executive entrenchment and potential agency conflicts with outside investors. In another perspective, Chau and Gray (2002) find that the level of information disclosure is likely to be less in family controlled companies.

The agency conflicts between insiders and outside shareholders may be duplicated in state-controlled corporations (those controlled directly by the state or by companies owned by the state). As argued by Gugler (2003), in such firms, a double principal-agent problem exists. The state acts on behalf of the citizens who do not control the firm directly. Agency problems can arise between citizens and state representatives and between state representatives and managers who look to their own interest.

Contrary to these controlling shareholders, institutional investors are seen to be active in corporate governance. The literature recognizes that institutional investors serve a significant role as monitors in the stock market (Agrawal and Mandelker, 1992). The efficient monitoring hypothesis initiated by Bathala *et al.* (1994) provides that institutional investors, by their expertise, can mitigate information asymmetry between insiders and outsiders. The authors argue that these investors have more incentive to influence the corporation manager's decision compared

to common investors because of their advantage of capital, technology and human resources.

2.2. Agency Conflicts, Information Asymmetry and Dividend Smoothing

The impact of agency conflicts and information asymmetry on dividend smoothing has been empirically tested in the prior literature. In their comparison between Japanese firms and U.S firms, Dewenter and Warther (1998) provide evidence consistent with less constrained dividend adjustment by Japanese firms, and keiretsu-member firms in particular. Speed-of-adjustment indicates that Japanese keiretsu-member firms adjust dividend more quickly than both US firms and Japanese independent firms. They argue that Japanese firms are subject to less information asymmetry and fewer agency conflicts than U.S firms and that keiretsu-member are subject to less information asymmetry and fewer agency conflicts than independent Japanese firms. Gugler (2003) find that state-controlled firms show significant dividend smoothing compared to firms controlled by families, banks and foreign owners. This result is consistent with the managerial/agency cost explanation. The author argues that in state-controlled firms a double principal-agent problem even exists, namely the managers of the firm and the elected representatives of the government on the one hand, and between the elected representatives of the government and the citizens on the other hand.

Aivazian *et al.* (2006) find that firms that regularly access to public debt (bond) markets are more likely to follow a dividend smoothing policy than firms that rely exclusively on private (bank) debt. This result is related to asymmetric information and Agency Problem I. The use of private (bank) debt reduces the value of signalling and agency reduction roles typically fulfilled by dividend payments. However, in order to attract investors, firms with public market debt have greater incentives to adopt dividend policies that are designed to reduce asymmetric information and Agency Problem I.

Michaely and Roberts (2006) examine, among other things, the dividend smoothing behavior by decomposing firms into private and public firms. In accordance with asymmetric and agency explanation, their results show that public firms are the most likely to smooth dividends followed by private dispersed firms and then private concentrated firms.

Knyazeva (2007) examines the effect of corporate governance on dynamic dividend behavior. The results show that weakly governed managers engage in more dividend smoothing, have lower dividend variability, and fewer dividend cut.

The findings of Leary and Michaely (2010) suggest that firms facing greater uncertainty and more information asymmetry smooth less, which is inconsistent with the implications of several of the existing asymmetric information models. At the same time, the results indicate that firms that are cash cows, firms with low growth prospects, and firms that are monitored by institutional investors smooth more. The authors interpret these results as consistent with several of the implications of agency theories.

2.3. Hypotheses Development

The fundamental premise of this study is that there should be an economic association between large shareholders' activism quality and dividend smoothing behavior due to their relationship to asymmetric information and Agency Problems I and II. It is not theoretically obvious, however, what the exact relationship should be. The study suggests two possible hypotheses.

A- The Substitute Hypothesis

According to La Porta *et al.* (2000), this view relies crucially on the need for firms to come to the external capital markets for funds, at least occasionally. As suggested by Easterbrook (1984), managers of firms need to establish a reputation with public capital markets for not expropriating wealth from shareholders because the firm will need to tap such markets to raise new external capital in the future. The substitute model stipulates that dividend policy is a substitute for other governance mechanisms in reducing asymmetric information and Agency Problem I. Better-governed firms should be less likely to smooth dividends as a device to mitigate asymmetric information problems and agency conflicts opposing managers to shareholders (La Porta *et al.*, 2000; Knyazeva, 2007 and Adjaoud and Ben-Amar, 2010). Hence, the following hypotheses are proposed:

H1a: Majority-controlled firms are expected to show more dividends smoothing than minority-controlled firms.

H1b: State-controlled firms are expected to show more dividends smoothing, followed by family-controlled firms, and then financial institutions-controlled firms.

B-The Outcome Hypothesis

The hypothesis derived from the outcome model is based on the cash flow hypothesis of Jensen (1986). Dividend payouts are the outcome of the firm's governance quality. Managers of firms with weak governance are more likely to retain cash within the firm as it allows them to consume more perquisites and invest in projects that generate more personal benefits at the expense of shareholders' wealth. By contrast, in firms with strong governance, managers are less likely to spend the free cash flow in their own interests. Thus, they act in the interests of shareholders and pursue value-maximizing policies, such as paying out cash to shareholders. It implies that other things equal, dividends are sticky and are less sensitive to changes in current earnings. In this model, strong governance and a policy of smoothing dividend are complements. Therefore, the following hypotheses are proposed:

H2a: Minority-controlled firms are expected to show more dividends smoothing than majority-controlled firms.

H2b: Financial institutions-controlled firms are expected to show more dividends smoothing, followed by family-controlled firms, and then state-controlled firms.

3. Research Design and Variable Definitions

3.1. Modelling Dividend Smoothing

In his study, Lintner (1956) develops a statistical model to consider the smoothing process in dividend payments. According to this model, dividends are the result of a partial adjustment process towards a target ratio. Changes in dividends are determined by the difference between last year's dividends and this year's target payout level.

$$DPS_{it}^* = r_i EPS_{it} \quad (1)$$

Where DPS_{it}^* is the expected dividend payment for firm i in period t , r_i is the target payout ratio, EPS_{it} is the earning per share for firm i in period t .

The dividend change is equal to:

$$DPS_{it} - DPS_{i(t-1)} = c_i(DPS_{it}^* - DPS_{i(t-1)}) \quad (2)$$

$$DPS_{it} - DPS_{i(t-1)} = c_i r_i EPS_{it} - c_i DPS_{i(t-1)} \quad (3)$$

Therefore, Lintner partial adjustment model is:

$$DPS_{it} = \beta_0 + \beta_1 EPS_{it} + \beta_2 DPS_{i(t-1)} + \varepsilon_{it} \quad (4)$$

Where, DPS_{it} is the dividend per share for firm i at time t , EPS_{it} is the earnings per share for firm i at time t , $DPS_{i(t-1)}$ is the last year dividend per share, ε_{it} is the error term. β_1 is $c_i r_i$, where r_i is the target payout ratio, c_i is the speed of adjustment (SOA) coefficient. The higher the SOA, the faster the adjustment towards the target. β_2 is $(1-c_i)$.

This paper predicts differences in dividend smoothing of firms according to their control structure. To test this prediction, equation (4) is augmented with interactive variables which capture the firms' classification type. The final model is as follow:

$$DPS_{it} = \sum_j [\alpha_j + \beta_j EPS_{it} + \gamma_j DPS_{i(t-1)}] OWN(j)_{it} + CONTROLS_{it} + \mu_{it} \quad (5)$$

Where $OWN(j)_{it}$ is a dummy variable equal to 1 if company i belongs to control structure j in year t and zero otherwise. With respect to chosen control structure, parameters $r_j = \beta_j/c_j$ and $c_j = 1 - \gamma_j$ reflect the target payout ratio and the speed of adjustment of control structure j . $CONTROLS_{it}$ are control variables used to control for firm characteristics (size, leverage, and growth opportunities).

3.2. Variable Definition

To respond to the research question, the firms of the sample are classified into two categories according to the voting power of the largest shareholders. To measure this voting power, the research relies on the study of Leech (1999) which defines control of a company as the right to exercise whatever discretion in strategic decision making exists. More generally, the power of a shareholding is the extent to which the votes it commands can influence a decision taken by shareholders under majority voting.

We 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), this study proposes 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). To compute the Banzhaf indices, the study considers an oceanic game 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, \dots, w_m and quota¹ $[q = (1-w(M))/2]$ (Leech, 1999). An algorithm for the computation of these indices is developed (see appendix 1). Two procedures are used to compute the voting power of the largest shareholders. A one-stage voting game which measures the absolute Banzhaf indices of the largest and the second largest shareholder, and a two-stage voting game which measures the absolute Banzhaf indices of shareholders' coalitions. Three coalitions are distinguished: Family, Financial institutions and State. Table 2 presents a description of the firm classification.

Dividend is defined as Dividend Per Share (DPS). It is calculated as common dividends divided by total share outstanding. Earnings are Earnings Per Share (EPS) calculated as net earnings divided by total share outstanding.

In addition, the study follows the established dividend literature and use the following variables to control for some firm characteristics: SIZE (logarithm of total assets), LEVERAGE (long term debt deflated by total assets) and GROWTH (growth rate between the current year and the following year of sales).

4. Sample and Descriptive Statistics

4.1. Sample Selection and data sources

The base for the selection of the sample was the list of issuers of listed securities admitted to trading on a regulated market from the Tunisian securities market commission for the period 1998-2009. Banking and

¹ In a « Proper » game, we must have $q \geq 0.5$ 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.

insurance companies are excluded because of their special regulations and accounting specificity. Then, the sample is narrowed down by eliminating firms with missing data. Firms with non-positive earnings are also eliminated because of their negative payout ratios for those paying dividends or because they have never paid dividends during the period of analysis. After imposing these requirements, the final sample is composed of 528 firm-year observations covering the years 1998 to 2009. The sample procedure is reported in Panel A of Table 1.

The frequency distribution of sample firms by business sector in Panel B of Table 1 shows that the majority of firms come from the financial services (27.27%) and consumer goods (20.46%) sectors, followed by the industrials (18.18%), consumer services (15.91%), basic material (9.09%), health care (4.55%), telecommunication (2.27%) and oil and gas (2.27%) sectors.

The ownership and accounting data were gathered from the annual reports of each company registered in the

official bulletins of the Tunisian Stock Exchange (TSE) and the Financial Market Council (FMC) available on their websites. Data not available on the websites have been manually collected from annual end-of year reports published by the Financial Market Council.

Table 2 presents the decomposition of the sample by the control degree of the largest shareholder and the identity of controlling shareholders coalitions. The first decomposition is performed according to the voting power of the first shareholder (Z1). If this power exceeds 50%, the firm is majority controlled. In contrast, if this voting power is below 50%, the firm is minority controlled (presence of a strong second largest shareholder). According to this typology, the second shareholder has control in 34% of companies in the sample. In 66% of cases, control is maintained by the first shareholder.

The second decomposition relies on the identity of shareholders coalitions. As shown by panel B of Table 2, family control 47.7% of firms, followed by financial

Table 1: Sample Description

Panel A- Sample Selection

| <i>Firms</i> | <i>Frequency</i> |
|--|------------------|
| Firms making public offering | 128 |
| Less | |
| Banking and insurance companies | 36 |
| Companies with missing data | 40 |
| Firms with non-positive earnings and paying dividends | 3 |
| Firms with non-positive earnings during the period analysis and never paying dividends | 5 |
| = Total | 44 |

Panel B- Sample Distribution by Sector

| <i>Business sector</i> | <i>Frequency</i> | <i>Percentage</i> |
|--|------------------|-------------------|
| Financial services (Leasing and Investment) | 12 | 27.27% |
| Consumer goods | 9 | 20.46% |
| Consumer services | 7 | 15.91% |
| Health care | 2 | 4.55% |
| Telecommunication | 1 | 2.27% |
| Industrials (constructions and materials, industrial goods and services) | 8 | 18.18% |
| Basic material | 4 | 9.09% |
| Oil and gass | 1 | 2.27% |
| Total | 44 | 100% |

Table 2: Firm Classification

| Panel A : Control concentration degree | | |
|--|-----------------|---------------|
| | Number of firms | Frequency (%) |
| Majority-controlled ($Z1 > 50\%$) | 29 | 66 |
| Minority-controlled ($Z1 \leq 50\%$) | 15 | 34 |
| Total | 44 | 100 |

Panel B : Shareholders coalition identity

| | | |
|--|----|------|
| Family-controlled ($ZFAM > ZINST$ and $ZFAM > ZSTAT$) | 21 | 47.7 |
| Institutions-controlled ($ZINST > ZFAM$ and $ZINST > ZSTAT$) | 15 | 34.1 |
| State-controlled ($ZSTAT > ZFAM$ and $ZSTAT > ZINST$) | 8 | 18.2 |
| Total | 44 | 100 |

institutions who control 34.1% of firms, and then the state who controls 18.2% of firms. These results illustrate the importance of family control in the Tunisian companies in line with other contexts of Europe and Asia as provided by La Porta *et al.* (1999).

4.2. Descriptive Statistics

Table 3 reports the differences in means and median of firm characteristics between majority and minority-controlled firms and family, institutional and state-

controlled firms. The results indicate that there are only systematic differences for the second typology. Institutional-controlled firms have higher leverage ratio and pay higher dividends based on dividend per share and dividend payout ratio than family-controlled and state-controlled firms. On the other hand, family-controlled firms are smaller base on total assets, have higher but statistically insignificant growth opportunities. Given these systematic differences, it is important to control for those factors when estimating the dividend smoothing behavior of these firms.

Table 3: Descriptive Statistics

Panel A: Difference between Majority and Minority-controlled Firms

| Variable | Majority-controlled | | Minority-controlled | | Difference in Mean |
|----------|---------------------|--------|---------------------|--------|--------------------|
| | Mean | Median | Mean | Median | |
| DPS | 1 | 0.7 | 1 | 0.9 | 0.01 |
| EPS | 1.7 | 1.3 | 1.8 | 1.6 | -0.17 |
| Payout | 0.5 | 0.5 | 0.6 | 0.6 | -0.11* |
| SIZE | 7.7 | 7.6 | 7.7 | 7.7 | -0.02 |
| Leverage | 0.2 | 0.1 | 0.2 | 0.1 | -0.01 |
| Growth | 0.1 | 0.1 | 0.1 | 0.1 | 0.02 |

Panel B: Difference between Family, Institutional and State-controlled Firms

| Variable | Family-controlled | | Inst-controlled | | State-controlled | | Difference in Mean | | |
|----------|-------------------|--------|-----------------|--------|------------------|--------|--------------------|-----------|------------|
| | Mean | Median | Mean | Median | Mean | Median | Fam/Inst | Fam/stat. | Inst/stat. |
| DPS | 0.9 | 0.7 | 1.2 | 1 | 0.8 | 0.7 | -0.28*** | 0.14* | 0.42*** |
| EPS | 1.9 | 1.3 | 1.7 | 1.6 | 1.3 | 1.1 | 0.24** | 0.64*** | 0.40** |
| Payout | 0.4 | 0.4 | 0.6 | 0.6 | 0.5 | 0.5 | -0.15*** | -0.04 | 0.11*** |
| SIZE | 7.5 | 7.5 | 7.7 | 7.7 | 7.9 | 7.7 | -0.20* | -0.36* | -0.16 |
| Lev | 0.1 | 0.0 | 0.2 | 0.2 | 0.2 | 0.2 | -0.09*** | -0.08*** | 0.01 |
| Growth | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.01 | 0.02 | 0.01 |

***, **, *: significant respectively at 1%, 5% and 10% level

5. Empirical Results

Panel A of Table 4 provides estimates for different econometric specifications of the Lintner model. For each regression, the dividend per share at time t (DPS) is regressed against the lagged dividend and earnings per share. The first model includes all firm-year observations. The results show that both the lagged dividend and earnings per share are highly significant with a relatively high weight put on the lagged dividend. For the overall sample, the speed of adjustment is 22% (1-0.78), which indicates that on average the firms require approximately 5 years to adjust their dividend to the target payout ratio. These results indicate a tendency for Tunisian companies of the sample to smooth their dividends.

In the second model, an interaction term was included in order to distinguish the majority-controlled firms from the minority-controlled firms within the sample. The results are reported in Table 4. Columns (3) and (4) correspond to current profits and lagged dividend coefficients across control categories, and columns (5) and (6) report differences from majority-controlled firms.

In accordance with the predictions of the outcome model, the results show that the dividends of minority-controlled firms are slightly “smoother” than those of majority-controlled firms. The speed of adjustment of minority-controlled firms is 19% (1-0.81) and 32% (1-0.68) for the majority-controlled firms. These results indicate that on average the minority-controlled firms require about 5 years to adjust their dividends to the target payout. For

Table 4: Lintner model regression estimates

Panel A: Controlling Shareholders and Dividend Smoothing

| Control category | Total sample | | Control level | | | | Control type | | | |
|---------------------|--------------|-----------|---------------|----------|---------------|----------|--------------|----------|--------------------|----------|
| | β_1 | β_2 | β | γ | Difference | | β | γ | Difference to fin. | |
| All firms | 0.13*** | 0.78*** | | | β | γ | | | β | γ |
| Maj-cont. | | | 0.15*** | 0.68*** | Ref. category | | | | | |
| Min-cont. | | | 0.13*** | 0.81*** | -0.02 | 0.13 | | | | |
| Family | | | | | | | 0.14*** | 0.59*** | 0.03** | -0.27*** |
| Fin. Instit. | | | | | | | 0.11*** | 0.86*** | Ref. category | |
| State | | | | | | | 0.18*** | 0.50*** | 0.07*** | -0.36*** |
| Adj. R ² | 87.37% | | 87.73% | | | | 88.15% | | | |
| Fisher F | (1519.17)*** | | (776.75)*** | | | | (574.35)*** | | | |
| N | 528 | | 528 | | | | 528 | | | |

Panel B: Regression Results with Control Variables

| Control category | Control level with control variables | | | | Control type with control variables | | | | | |
|---------------------|--------------------------------------|----------|--------------------|----------|-------------------------------------|----------|--------------------|----------|--|--|
| | β | γ | Difference | | β | γ | Difference | | | |
| | | | β | γ | | | β | γ | | |
| Maj-cont. | 0.17*** | 0.62*** | Reference category | | | | | | | |
| Min-cont. | 0.14*** | 0.75*** | -0.03 | 0.13 | | | | | | |
| Family | | | | | 0.15*** | 0.57*** | 0.01** | -0.26*** | | |
| Fin. Instit. | | | | | 0.14*** | 0.83*** | Reference category | | | |
| State | | | | | 0.18*** | 0.49*** | 0.04*** | -0.34*** | | |
| Size | -0.23 | | | | | | -0.19 | | | |
| Leverage | | | -0.42** | | | | 0.45** | | | |
| Growth | | | -0.08 | | | | -0.07 | | | |
| Adj. R ² | | | 87.79% | | | | 89.46% | | | |
| Fisher F | | | (326.17)*** | | | | (217.38)*** | | | |
| N | | | 528 | | | | 528 | | | |

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

the majority-controlled firms, it takes about 3 years. The coefficient associated to the difference between the two control categories is not significant.

The third model extends the Lintner estimates to include an interaction term for whether the firm is family-controlled, financial institutions-controlled or state-controlled. Columns (7) and (8) from Table 4 correspond to current profits and lagged dividend coefficients across control categories, and columns (9) and (10) report differences from financial institutions-controlled firms.

Empirical findings support the outcome hypothesis H2b. Financial institutions-controlled firms adjust dividend more quickly than both family-controlled firms and state-controlled firms. Based on the regression results, the speed of adjustment is 14% for the financial institutions-controlled firms, 41% and 50% for the family and state-controlled firms respectively. In other words, the firms of the first group take on average 7 years to adjust their dividends to the target payout against nearly 2 years for the two other groups.

In the fourth and fifth models (Panel B of Table 4), the log of total assets, leverage and growth rate of sales were included as control variables in order to ensure that the results are not driven by the systematic differences in firm characteristics. The results show that for the two regressions, there are no material changes on the coefficients. Overall, the results indicate a significant difference in dividend smoothing behavior between family, financial institutions and state-controlled firms and an insignificant difference between majority and minority-controlled firms.

6. Conclusion

The main purpose of this paper is to shed some light into the association between dividend smoothing and large shareholders' activism quality by employing a sample of the major making public offering Tunisian firms for the period 1998 to 2009. Based on the agency and signaling theory of dividends, two opposing testable hypotheses derived from the two models of dividends: the substitute and the outcome model were proposed.

Empirically, the study finds that the degree of dividend smoothing engaged by minority-controlled firms is more than the majority -controlled firms. Likewise, the degree of dividend smoothing engaged by financial institutions-

controlled firms is more than the family-controlled firms and the state-controlled firms.

The results are not consistent with asymmetric information and agency explanations of dividend smoothing as provided by Dewenter and Warther (1998), Gugler (2003), Aivazian *et al.* (2006), and Michaely and Roberts (2006). An alternative explanation of these results consists in large shareholders activism quality. In firms with high quality of large shareholders activism (minority-controlled firms and financial institutions-controlled firms), dividend smoothing is used as a complementary mechanism to alleviate asymmetric information and Agency Problem I. However, in firms with low quality of large shareholders activism (majority-controlled and family and state-controlled firms), dividend smoothing appears as an outcome of controlling shareholders preferences.

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Appendix

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) = $(2/12) = 0.166$