Family firms and the market reaction to dividend news

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Abstract

This paper provides an analysis of the market reaction to dividend change announcements in listed and family-controlled firms, analysing 390 dividend change announcements in Portugal over the period from 1991 to 2010, using panel data approach. Family firms present a significantly lower proportion of independent directors than non-family firms, which is consistent with the perspective that family members dominate the board of directors and that family shareholders are common in public traded firms.

The results show no evidence of a significant market reaction to dividend change announcements, providing no evidence in support of the dividend signalling hypothesis in the context of the family firms. This conclusion is in accordance with previous studies, which do not distinguish between family and non-family firms.

Empirical results demonstrate that family firms present lower payouts than their nonfamily counterparts, giving some support to the expropriation hypothesis. It might be an indication that families expropriate the wealth of shareholders through lower dividends. This result is also consistent with the clientele theory of dividends.

Key Words: *Family Firms, Cash Dividends, Signalling Hypothesis, Market Reaction*

JEL codes: 170, 800

1. Introduction

One of the widely discussed topics in the domain of the dividend policy is the market reaction to dividend change announcements. Miller and Modigliani (1961) argue that, in a perfect capital market, firm value is independent of the dividend policy. However, according to Bhattacharya (1979), John and Williams (1985) and Miller and Rock (1985), managers have more information than shareholders about the firm's future cash flows, resulting in information asymmetry between managers and shareholders. Consequently, dividend change announcements can be used to convey valuable information to the market concerning the managers' expectations about future cash flows of firms. Consequently, a positive and significant relationship is expected between dividend change announcements and the subsequent share price reaction.

Although the vast literature analysing the market reaction to dividend change announcements, the studies do not explore this relationship in the context of family-controlled firms. The few number of studies that analyse the dividend policy in the context of family-controlled firms (e.g. Setia-Atmaja, 2010) do not explore the market reaction to dividend change announcements.

Moreover, a vast number of papers find evidence supporting that family shareholders are common in public traded firms worldwide, having large equity stakes and executive representation (Claessens *et al.*, 2000; Faccio and Lang 2002; Anderson and Reeb, 2003; Villalonga and Amit, 2006; Holderness, 2009).

In this context, we analyse the market reaction to dividend change announcements in listed and family-controlled firms, using a panel data of non-financial Portuguese firms. About 56% of the sample firms are family-controlled.

Our paper makes several contributions to the literature. First, it offers some insights on the dividend policy in the context of family firms, since there is a lack of research on this subject worldwide. Second, it focuses on Portuguese family firms, which are strongly representative of concentrated ownership and family control. Faccio and Lang (2002) find evidence that family firms constitute 60.34% of sample firms in Portugal and that in about 50% of the family controlled firms, the controlling owner is in management. However, if it is a reason for a contribution of our study, it is, simultaneously, a limitation of our work because of the small size of the sample.

Finally, this is the first study to analyse the market reaction to dividend change announcements related to family-controlled firms.

The remainder of this paper is organised as follows. Section 2 provides a literature review and hypotheses development. Section 3 describes the sample and methodology. Section 4 discusses the empirical results. Finally, section 5 concludes the paper.

2. Literature Review and Hypotheses

According to the dividend signalling hypothesis, a positive and significant relationship is expected between dividend change announcements and the subsequent share price reaction. In this context, we formulate the first hypothesis in its alternative form:

H_1: The market reaction to dividend change announcements is positive.

Among the vast literature that analyses the market reaction to dividend change announcements, a significant number of studies find a positive and significant relationship between dividend change announcements and the subsequent share price reaction, finding evidence for the information content of dividends (Pettit, 1976; Dhillon and Johnson, 1994; Yilmaz and Selcuk, 2010). However, some studies find no evidence of a significant relationship between dividend change announcements and the subsequent market reaction (Benartzi *et al.*, 1997; Abeyratna and Power, 2002; Ali and Chowdhury, 2010; Asamoah, 2010).

We expect that family controlled firms have peculiarities in their dividend policy decisions, when compared to non-family firms.

Dividends are seen as a mean to reduce cash flow that managers can use at their discretion (e.g., Jensen, 1986). Consequently, they may play a significant role in controlling agency problems in family firms, reducing free cash flow that might otherwise be expropriated, while independent directors can monitor and restrict the opportunistic behaviour of controlling families (La Porta *et al.*, 2000; Faccio *et al.*, 2001; Anderson and Reeb 2004).

Agency problems can be seen from different perspectives in the context of family controlled firms. According to Jensen and Meckling (1976) and Fama and Jensen (1983), governance mechanisms are not necessary in family firms, because of the interest alignment between owner and manager. However, according to a vast existing literature, family controlled firms may either intensify or mitigate agency problems.

In widely held firms, managers have incentives to maximize their utility rather than the shareholders wealth. Because managers do not hold equity, their objectives are not aligned with those of the shareholders. Villalonga and Amit (2006) referred to this type of conflict between managers and shareholders as *Agency Problem I*, which can be attenuated by increasing the participation of managers on the firm's equity, as managers and shareholders' objectives became aligned. However, in firms with large controlling shareholders, agency conflicts are between controlling shareholders and minority shareholders, because the former can turn away resources from the firm in order to follow private benefits, damaging the minority shareholders. This agency conflict was denominated as *Agency Problem II* by Villalonga and Amit (2006).

Some authors argue that families have greater incentive to monitor managers than other large shareholders (e.g. Anderson and Reeb, 2003). Gomez-Mejia *et al.* (2001) argue that agency conflicts between owner and manager are more complicated in family firms due to entrenched ownership and asymmetric altruism.

If family firms pay higher dividends, we might expect that controlling families are not diverting resources from minority shareholders, and, consequently, are mitigating agency problems (Fama and Jensen, 1983; Bozec and Laurin, 2008; Setia-Atmaja *et al.*, 2009). In addition, families might be better monitors of managers than other shareholders (Anderson and Reeb, 2003), resulting in a greater alignment between shareholders and managers' interests (La Porta *et al.*, 1999). La Porta *et al.* (2000) argue that dividends can reduce agency costs, removing wealth from the controlling blockholders.

Although it is widely documented that dividends can be seen as one of several alternative governance control mechanisms of alleviating agency costs (Fama and Jensen, 1983; Bozec and Laurin, 2008; Setia-Atmaja *et al.*, 2009), some studies refute this assumption (La Porta *et al.*, 2000; Fenn and Liang, 2001; Grinstein and Michaely, 2005). Using data from the USA (1980 to 1996), these last authors find no evidence of a significant relationship between the portion of shares held by institutions and the amount of dividends used to improve the agency conflicts.

According to the rent extraction hypothesis, dividend increases (decreases) are associated with positive (negative) abnormal returns, since higher (lower) dividends reduce (increase) the cash flows that large shareholders can expropriate. Gugler and Yurtoglu (2003) argue that dividends are a perfect mechanism for limiting rent

expropriation of minority shareholders and dividend reductions may increase the potential for rent extraction. Some authors suggest that families tend to expropriate minority shareholders wealth, especially when family control is greater than its cash flow rights (Faccio *et al.*, 2001; Villalonga and Amit, 2006).

According to DeAngelo and DeAngelo (2000), the concentration of personal and family wealth in owner-managed firms usually creates a preference for income and for wealth preservation rather than other dimensions of firm performance, such as the maximization of dividends payments to outside shareholders. Thus, family interest may dominate over the interest of non-family shareholders.

In the context of the expropriation argument, families prefer lower dividend payouts in order to preserve cash flows that they can expropriate (De Cesari, 2009; Setia-Atmaja *et al.*, 2009). In addition, family controlled-firms may be less affected by agency problems than non-family controlled-firms. Hence, we formulate the following hypothesis:

> *H_2: The dividend payout ratio is lower for family than non-family controlled firms.*

The empirical evidence is, however, conflicting.

De Cesari (2009), Gugler (2003) and Gugler and Yurtoglu (2003) find evidence that family-controlled firms pay lower payout ratios than their counterparts, which is consistent with the rent expropriation hypothesis. De Cesari (2009) analyses a sample of Italian non-financial family-controlled firms for the period between 1999 and 2004, Gugler (2003) examine a sample of Austrian family-controlled firms and Gugler and Yurtoglu (2003) study a sample of German firms over the period 1992-1998.

However, Pindado and Torre (2008) analyse a sample of Spanish listed firms between 1990 and 1999, finding no significant difference for dividends in family and non-family firms.

Hu *et al.* (2007) find evidence that family firms have lower dividend payout ratios than non-family firms, consistent with the expropriation hypothesis and the tax clientele theory of dividends. However, they find that family firms without active management by family members have higher dividend payout ratio than family firms with active management, consistent with the agency theory of dividends.

Jensen *et al.* (1992) and Noronha *et al.* (1996) find a negative relationship between insider ownership and dividend payout, suggesting that firms with higher insider ownership do not need to use dividends to mitigate agency problems.

Finally, some authors find evidence that family controlled firms have higher dividend payout ratios compared to non-family firms (Setia-Atmaja *et al.*, 2009; Setia-Atmaja, 2010).

Using a sample of Australian firms for the period between 2000 and 2005, Setia-Atmaja *et al.* (2009) found evidence that family controlled firms employ higher dividend payout ratios than non-family firms, concluding that family firms use dividends and debt as a substitute for independent directors. They conclude that dividend payouts are not only driven by tax, but also by corporate governance reasons. Moreover, the authors found evidence that the impact of dividends on performance seems to be stronger for family than non-family firms.

In another study, Setia-Atmaja (2010) shows that family controlled firms have higher dividend payout ratio than their non-family counterparts, suggesting that families do not expropriate the wealth of shareholders through lower dividends or lower debt. The author suggests that this happens because of the higher proportion of independent directors on family boards, which have a significant role in influencing family firms' dividend policy. Moreover, the results suggest that independent directors and dividends are complementary government mechanisms.

Anderson and Reeb (2004) provide evidence that family members dominate the board of directors. Therefore, the board independence can be used by firms as a signalling mechanism to protect their legitimacy. In this context, we consider the third hypothesis:

> *H_3: The market reaction to dividend changes is lower for family than non-family controlled firms.*

In a family-controlled firm, owners tend to be reluctant to share information they consider proprietary (e.g., Schulze *et al.*, 2001).

3. Data and Methodology

We examine a panel data on a sample of dividend changes from 1991 through 2010 for Portuguese listed firms on the Euronext Lisbon (EL). The sample comprises family and non-family controlled firms. Dividend and other event announcements were gathered

from the EL database *Dhatis* as well as from the Bloomberg. The remaining data set was obtained from SABI, a private database provided by Bureau van Dijk.

Table 1 reports the number of dividend events classified by sample selection criteria.

The final sample comprises an unbalanced panel data of 390 announcements, consisting of 164 increases, 112 decreases and 114 announcements of unchanged dividends. Family firms constitute around 56 % of the total sample. The preponderance of family firms is in accordance with Faccio and Lang (2002)[i].

When we split the sample according family and no-family firms, we have a sub-sample of family firms with 250 events: 100 dividend increases, 85 no-changes and 65 decreases. For the sub-sample of non-family firms, the sample comprises 140 events: 64 dividend increases, 29 no-changes and 47 decreases.

The annual dividend change corresponding to the dividend announcement is defined as the difference between the announced dividend in year t and the prior year dividend, scaled by the announcement day share price:

$$\Delta D_{i,t} = \frac{D_{i,t} - D_{i,t-1}}{P_{i,0}} \qquad [1]$$

The subscripts i and t represent the firm and the year, respectively. $\Delta D_{i,t}$ is the dividend changes, and $P_{i,0}$ is the share price in the announcement day.

The announcement effect exists if abnormal returns are significant. To measure the market reaction to dividend change announcements, we consider the buy-and-hold abnormal returns (BHARs) approach[ii] to determine the abnormal returns. The abnormal return for a share is defined as the geometrically compounded (buy-and-hold) return on the share minus the geometrically compounded return on the market index. Therefore, the "buy-and-hold" abnormal return for share i from time -1 to +1 [$BHAR_{i,(-1\ to\ +1)}$] generating model takes the following form:

$$BHAR_{i(-1\,to\,+1)} = \prod_{t=-1}^{1}(1+R_{i,t}) - \prod_{t=-1}^{1}(1+R_{m,t}) \qquad [2]$$

The time period constitutes the three trading days from t = -1, 0 +1, where 0 is the event day.

There is a diversity of definitions for family firms in the literature. We follow prior studies (e.g., La Porta *et al.*, 2000; Setia-Atmaja *et al.*, 2009) and define family firms (FAMILY) as those in which the founding family or family member controlled 20 per cent or more equity, and was involved in the top management of the firm.

The dividend payout ratio (PAYOUT) is measured as ordinary dividends divided by net income before extraordinary items (La Porta *et al.*, 2000; Faccio *et al.*, 2001; Setia-Atmaja, 2010).

We control for firm size, investment opportunities, leverage, performance, tax effect and board independence.

The firm size (FS) is computed as the natural logarithm of total assets. The investment opportunities (INV) is measured by the Tobin's Q, computed as the market value of common equity plus the book value of total assets minus common equity divided by the book value of total assets. The firm leverage (DEBT) is calculated as the ratio of total debt to total assets. Firm performance (ROA) is measured as operating income before depreciation divided by the book value of assets. The tax effect (TAX) is calculated as the tax paid, divided by total assets and the board independence (BOARD) is measured as the proportion of independent directors on the board. According to Anderson and Reeb (2004) and Setia-Atmaja (2010), independent directors are the individuals whose only business relationship to the firm is their directorship, identified in firm's annual reports.

To test the formulated hypotheses, we employ the following regression models:

$$\begin{aligned} BHAR_{i,(\_1to\ +1)} = {} & \alpha + \beta_1\, \mathrm{DI} \times \Delta \mathrm{D}_{i,0} \times \mathrm{FAMILY}_{i,t} + \beta_2\, \mathrm{DD} \times \Delta \mathrm{D}_{i,0} \times \mathrm{FAMILY}_{i,t} + \\ & + \beta_3\, \mathrm{FS}_{i,t} + \beta_4\, \mathrm{INV}_{i,t} + \beta_5\, \mathrm{DEBT}_{i,t} + \beta_6\, \mathrm{ROA}_{i,t} + \beta_7\, \mathrm{TAX}_{i,t} + \\ & + \beta_8\, \mathrm{BOARD}_{i,t} + \beta_9\, \mathrm{INDUSTRY}_{i,t} + \beta_{10}\, \mathrm{YEAR}_{i,t} + \varepsilon_{i,t} \end{aligned} \qquad [3]$$

$$\begin{aligned} PAYOUT_{i,t} = {} & \alpha + \beta_1\, \mathrm{FAMILY}_{i,t} + \beta_2\, \mathrm{FS}_{i,t} + \beta_3\, \mathrm{INV}_{i,t} + \beta_4\, \mathrm{DEBT}_{i,t} + \\ & + \beta_5\, \mathrm{ROA}_{i,t} + \beta_6\, \mathrm{TAX}_{i,t} + \beta_7\, \mathrm{BOARD}_{i,t} + \beta_8\, \mathrm{INDUSTRY}_{i,t} \\ & + \beta_9\, \mathrm{YEAR}_{i,t} + \varepsilon_{i,t} \end{aligned} \qquad [4]$$

The subscripts i and t represent the firm and the year, respectively. DI is a dummy variable that takes the value 1 if dividend increases and zero otherwise and DD is a dummy variable that takes the value 1 if dividend decreases and zero otherwise. We include industry dummy variables in order to consider any variation in the dependent

variable due to industry differences, and year dummy variables to remove any secular effects among the independent variable. The other variables have already been specified.

Equation [3] is used to test H_1 and H_3. If dividend changes convey information about a firm's future prospects, as suggested by the dividend information content hypothesis, the market reaction will be significant. We control for firm characteristics variables, as above explained.

Equation [4] is used to test H_2. The coefficient on FAMILY variable measures the impact on dividend payout for family firms (β_1).

We employ a panel data methodology. We use the F-statistic and the Hausman (1978) test to choose the most appropriate model, among the pooled ordinary least squares (OLS), the fixed effects model (FEM) and the random effects model (REM). We present the standard errors corrected for heteroscedasticity and covariance, based on the White's (1980) heteroscedasticity consistent standard errors method.

We must be aware that one problem associated with dividend event studies is that only the unexpected component of dividends should matter for share prices to change. However, we do not have access to the data about dividend forecasts to calculate the unexpected component of dividend changes. To obvious this problem, and following Gugler and Yurtoglu (2003), we re-estimate equation [3] considering a proxy for the unexpected component of dividend changes. Consequently, we restrict the dividend increases (decreases) to those events that experienced an earnings drop (rise) in the year of dividend increase (decrease) announcement relative to the year before the announcement. The drop (rise) in profits should make a dividend increase (decrease) less likely and so increase the unexpected element of such an announcement.

4. Results

Table 2 reports the summary statistics on the variables used in the subsequent analysis for the full sample.

On average, the dividend changes divided by the share price is -0.006. The negative value reflects the higher absolute value for dividend decreases than dividend increases. The firms report a mean payout of 41%. The evidence of payout with negative values suggests the reluctance of managers to reduce dividends even when firms present

negative earnings (Lintner, 1956). On average, the proportion of independent directors (BOARD) is 36.6%.

Table 3 presents the mean differences in dividends as well in the other variables for family and non-family firms.

The univariate analyses indicate that some variables differ significantly between family and non-family firms. On average, family firms pay around 33% of their net earnings in dividends whereas non-family firms pay 55%, being the difference statistically significant at the 1% level. The evidence that family firms pay lower payout ratios than non-family firms are in agreement with the results of DeAngelo and DeAngelo (2000), Gugler (2003), Gugler and Yurtoglu (2003), Hu *et al.* (2007) and De Cesari (2009), and suggest some evidence for the hypothesis 2. In addition, it suggests that families expropriate the wealth of shareholders through lower dividends, which gives some support to the expropriation hypothesis, like the studies of Gugler and Yurtoglu (2003), De Cesari (2009) and Setia-Atmaja *et al.* (2009). This result is also consistent with the clientele theory of dividends (Hu *et al.*, 2007).

Family firms employ significantly higher debt levels in their capital structure than their non-family counterparts (50.4% versus 44.5%), which is in accordance with the results of Setia-Atmaja (2010).

In what concerns the proportion of independent directors, family firms present a significantly lower proportion of independents directors than non-family firms (33.6% versus 40.3%). This result is consistent with the perspective that family members dominate the board of directors (Anderson and Reeb, 2004; Setia-Atmaja, 2010) and that family shareholders are common in public traded firms (Villalonga and Amit, 2006; Holderness, 2009; Claessens *et al.*, 2000; Faccio and Lang, 2002).

We cannot distinguish between family and non-family firms in what concerns the size, the investment opportunities and the profitability. The evidence that the market reaction to dividend changes is not different between family and non-family suggests no support for the hypothesis that the market reaction to dividend changes is lower for family than non-family controlled firms (H_3). The negative abnormal return at dividend increase announcements for the non-family firms (-0.002) is consistent with the results of Urooj and Zafar (2008).

In order to analyse the relationship between dividend change announcements and the subsequent market reaction, we estimate equation [3]. The output from this regression is reported in Table 4, considering the three models (OLS, FEM and REM). According to the F-statistic and the Hausman (1978) test, the OLS is considered the best model, so, we will analyse the respective output results.

Although dividend increases and decreases have the expected signal, the coefficients are not statistically significant. Consequently, we find no evidence for a significant relationship between dividend change announcements and the subsequent market reaction, as predicted by the dividend signalling hypothesis, which does not support H_1.

However, our results are consistent with several studies, such as the ones of Benartzi *et al.* (1997), Abeyratna and Power (2002) and Asamoah (2010), among many others, that find no evidence of a positive relationship between dividend change announcements and the share prices reaction. This result is consistent with the perspective that family firms do not need to signal the market though the dividend news.

In what concerns the firm specific variables, the results suggest that market reaction is driven by firm size, since we find a positive and significant relationship between firm size and the abnormal returns.

Table 5 presents the estimation of equation [4], being the OLS the best model.

The FAMILY coefficient is negative and statistically significant, suggesting a negative impact of family firms on dividend payout. This result is consistent with the previous one, presented in Table 3.

The evidence that the dividend payout ratio is lower for family than non-family controlled firms gives support to H_2, being in agreement with the expropriation hypothesis (Gugler, 2003; Gugler and Yurtoglu, 2003; De Cesari 2009; Setia-Atmaja *et al.*, 2009) and the clientele effect (Hu *et al.*, 2007). This result might be an indication that in the context of family firms, owners tend to be reluctant to share information they consider proprietary through the dividend policy (Schulze *et al.*, 2001), paying lower payouts.

With regard to control variables, the FS coefficient is negative and statistically significant, suggesting that the dividend payout ratio is negatively associated with firm size, which is in agreement with the results of Malkawi (2008). This negative relation might be associated with the fact that the informational asymmetry is greater for small

firms than for large firms (Haw and Kim, 1991) and that smaller firms opt to use dividend announcements to convey information to the market. The results suggest that the payout is not driven by tax reasons (Miller and Scholes, 1982; Archbold and Vieira 2010).

The lack of significance in the relation between the independence of board and the payout ratio might be an indication that dividends are not used as an alternative control mechanism of alleviating agency costs (Fenn and Liang, 2001; Grinstein and Michaely, 2005).

Finally, we re-estimate the equation [3] considering a proxy for the unexpected component of dividend changes. The results are reported in Table 6. The OLS is the best model.

As we can see, the results are quite similar from the ones presented in Table 4, so, our conclusions remain unchanged. The results for the dividend change announcements reinforces the evidence not supporting the dividend signalling hypothesis, or might be an indication that the proxy used for unexpected dividend changes is not robust.

Robustness Check

We re-estimate the equation [3] considering a different firm size measure (the natural logarithm of common equity) and an interaction variable between family firms and board independence.

In addition, we look for the REM results of regressions [3] to [5]. According to the notion that families generally maintain control over their firms for long periods (e.g., Setia-Atmaja, 2010), the family control in our sample seems to be stable over the considered period. Consequently, the REM seems to be more appropriate than the FEM. Globally, the results are quite similar to the OLS ones, so our main conclusions maintain the same.

Finally, we split the sample into family and non-family firms, making a separate analysis for robustness about our findings. The best model results for regressions [3] to [5] are shown in Tables 7 to 9, respectively.

As we can see in Table 7, the market reaction to dividend change announcements is not statistically significant, both for the sub-samples of family and non-family firms, which

is consistent with the previous results (Table 4). Consequently, we find no evidence supporting the dividend signalling hypothesis (H_1).

Looking at Table 8 results, and with regard to control variables, we can see that the ROA coefficient is positive and statistically significant for the both sub-samples, suggesting that the dividend payout ratio is positively associated with firm performance, which is consistent with the evidence that more profitable firms distribute more dividends (Malkawi, 2008; Ahamad and Javid, 2009).

This negative and significant relationship between investment opportunities and the payout ratio for the sub-sample of family firms suggests evidence for the free cash flow hypothesis (Jensen, 1986) as well as for the maturity hypothesis (Grullon *et al.*, 2002).

The results presented in Table 9 are globally in agreement with the ones presented in Table 6, reinforcing the conclusion that the market does not react to dividend change announcements, which does not give support to dividend signalling hypothesis, or might be an indication that the proxy used for unexpected dividend changes is not robust.

5. Conclusion

This study investigates the market reaction to dividend change announcements in Portuguese listed and family-controlled firms. In addition, it tries to analyse the influence of family firms on the payout ratio.

The results show that family and non-family firms are different in what concerns the payout ratio, the debt and the independent directors.

We find evidence that the dividend payout ratio is lower for family than non-family controlled firms. This result gives some support to the expropriation hypothesis, suggesting that families expropriate the wealth of shareholders through lower dividends. It is also consistent with the clientele theory of dividends.

In what concerns the proportion of independent directors, family firms present a significantly lower proportion of independents directors than non-family firms, which is consistent with the perspective that family members dominate the board of directors and that family shareholders are common in public traded firms. However, the proportion of independent directors is not significantly related with the payout level.

We find no evidence for a significant relationship between dividend change announcements and the subsequent market reaction, as predicted by the dividend

signalling hypothesis. Consequently, we find no support for the hypothesis that the market reaction to dividend changes announcements is positive and significant for family firms. Our results are consistent with several studies, such as the ones of Benartzi *et al.* (1997), Abeyratna and Power (2002) and Asamoah (2010), among others. This result is consistent with the perspective that family firms do not need to signal the market though the dividend news.

Our results suggest that dividends are not used as an alternative control mechanism of alleviating agency costs.

Finally, our results suggest that the payout is not driven by tax reasons.

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i They found a higher percentage (about 60%). However, they consider also no listed firms, which explain the difference between the two percentages.
ii Barber and Lyon (1997) investigated the bias sources in abnormal returns. They suggest that CARs are subject to a measurement, a new listing and a skewness bias, which all lead to positively biased test statistics. BHARs are subject to a new listing, a skewness (which is worse than that for CARs) and a rebalancing bias, which leads to negatively biased test statistics. However, in assessing these different biases, Barber and Lyon (1997, p.347) states that *"we favor the use of buy-and-hold abnormal returns to cumulative abnormal returns on conceptual grounds"*.

Table 1 - Sample Selection

This table reports the number of dividend events for the final sample, composed by dividend changes from 1991 to 2010 for Portuguese non-financial listed firms on the EL and for the sub-samples of family and non-family firms. Family firms are those in which the founding family or family member controlled 20 per cent or more equity, and was involved in the top management of the firm. To be included in the final sample, a dividend announcement must satisfy the following criteria: 1) the firm is not a financial institution; 2) the company paid an ordinary dividend in the current and previous year; 3) the firm's financial data is available on the *Dathis* database; 4) firms' earnings announcements or other contaminate announcements, such as stock splits, stock dividends and mergers, did not occur within 5 trading days of the dividend announcement.

	Dividend Increases	No Change	Dividend Decreases	Total
Total number of dividend events	168	140	115	423
Dividend events which earnings or other potentially contaminating announcements occurs within 5 days of the dividend change announcement	1	4	1	6
Dividend events with missing data	3	22	2	27
Total excluded dividend events	4	26	3	33
Total number of dividend events for analysis	**164**	**114**	**112**	**390**
Events Percentage (%)	**42.05**	**29.23**	**28.72**	**100.00**
Sub-samples:				
Family firms events	100	85	65	250
No-family firms events	64	29	47	140

Table 2 - Summary Statistics

This table reports descriptive statistics for the full sample, composed by dividend changes from 1991 to 2010 for Portuguese non-financial listed firms on the EL, including the mean, median, standard deviation, maximum and minimum values, skewness and kurtosis. ΔDi,t is the dividend per share change for year t; PAYOUT is the ratio of ordinary dividends divided by net income before extraordinary items; FS is the natural logarithm of total assets; INV is the market value of common equity plus the book value of total assets minus common equity divided by the book value of total assets; DEBT is the ratio of total debt to total assets; ROA is the operating income before depreciation divided by the book value of assets; TAX is the tax paid, divided by total assets and BOARD is the proportion of independent directors on the board.

Variable	Mean	Median	Min.	Max.	SD	Skewness	Kurtosis
$\Delta D_{i,t}$	-0.006	0	-0.454	0.867	0.076	2.68	51.661
PAYOUT	0.409	0.738	-11.880	1.450	0.822	-10.089	136.921
FS	19.594	19.174	15.781	24.411	1.923	0.466	-0.678
INV	0.932	0.874	0.062	4.325	0.485	1.716	7.652
DEBT	0.483	0.509	0.003	0.918	0.231	-0.310	-0.877
ROA	0.030	0.019	-0.012	0.209	0.033	2.066	6.072
TAX	0.006	0.003	-0.025	0.111	0.011	4.252	31.483
BOARD	0.366	0.333	0	0.857	0.148	0.478	1.918

Table 3 – Univariate Analysis

This table reports differences in variables between family and non-family firms, for the sample composed by dividend changes from 1991 to 2010 for Portuguese non-financial listed firms on the EL. Family firms are those in which the founding family or family member controlled 20 per cent or more equity, and was involved in the top management of the firm. The significance levels for means differences are based on a two-tailed t-test. ΔDi,t, is the dividend per share change for year t; PAYOUT is the ratio of ordinary dividends divided by net income before extraordinary items; BHAR-DI is the buy and hold accumulated abnormal return on the 3-day period as calculated by equation [2] for the dividend increase events; BHAR-DD is the buy and hold accumulated abnormal return on the 3-day period as calculated by equation [2] for the dividend decrease events; FS is the natural logarithm of total assets; INV is the market value of common equity plus the book value of total assets minus common equity divided by the book value of total assets; DEBT is the ratio of total debt to total assets; ROA is the operating income before depreciation divided by the book value of assets; TAX is the tax paid, divided by total assets; BOARD is the proportion of independent directors on the board.

Variable	Family firms	Non-family firms	Difference	t	
$\Delta D_{i,t}$	-0.005	-0.008	0.003	0.428	
PAYOUT	0.329	0.553	-0.224	-3.165	***
BHAR-DI	0.006	-0.002	0.008	1.654	
BHAR-DD	-0.004	-0.014	0.010	2.002	
FS	19065	19.494	0.156	0.709	
INV	0.901	0.987	-0.086	-1.493	
DEBT	0.504	0.445	0.059	2.453	**
ROA	0.031	0.029	0.002	0.589	
TAX	0.005	0.008	-0.003	-2.336	**
BOARD	0.336	0.403	-0.067	-8.181	***

*** Significantly different from zero at the 1% level
** Significantly different from zero at the 5% level

Table 4 - Regression of market reaction on dividend changes

This table reports the regression of dividend changes on market's reaction. The sample is composed by dividend changes from 1991 to 2010 for Portuguese non-financial listed firms on the EL. $BHAR_3$ is the buy and hold accumulated abnormal return on the 3-day period as calculated by equation [2]; ΔDi,t is the dividend per share change for year t; DI is a dummy variable that takes value 1 if dividend increases and zero otherwise; DD is a dummy variable that takes value 1 if dividend decreases and zero otherwise; FAMILY is a dummy variable that takes value 1 if the firm is a family firm and zero otherwise; Family firms are those in which the founding family or family member controlled 20 per cent or more equity, and was involved in the top management of the firm; FS is the natural logarithm of total assets; INV is the market value of common equity plus the book value of total assets minus common equity divided by the book value of total assets; DEBT is the ratio of total debt to total assets; ROA is the operating income before depreciation divided by the book value of assets; TAX is the tax paid, divided by total assets; BOARD is the proportion of independent directors on the board. The table presents the regression results for the OLS, FEM and REM models. It reports the F test, a test for the equality of sets of coefficients, and the Hausman (1978) test, a test with H_0: random effects are consistent and efficient, versus H_1: random effects are inconsistent, in order to choose the most appropriate model for each particular sample. The numbers in parentheses are the t-statistics corrected for heteroscedasticity using the White (1980) method.

$$BHAR_{i,(\_1to\ +1)} = \alpha + \beta_1\, DI \times \Delta D_{i,0} \times FAMILY_{i,t} + \beta_2\, DD \times \Delta D_{i,0} \times FAMILY_{i,t} + \\ + \beta_3\, FS_{i,t} + \beta_4\, INV_{i,t} + \beta_5\, DEBT_{i,t} + \beta_6\, ROA_{i,t} + \beta_7\, TAX_{i,t} + \\ + \beta_8\, BOARD_{i,t} + \beta_9\, INDUSTRY_{i,t} + \beta_{10}\, YEAR_{i,t} + \varepsilon_{i,t}$$

	OLS results			FEM results			REM results		
	Coefficient	**t**		Coefficient	t		Coefficient	t	
Constant	-0.0873	-2.485	**	-0.0996	-2.724	***	-0.0790	-2.454	**
DI x Δ $D_{i.t}$ x FAMILY	0.0152	0.367		0.0109	0.240		0.0174	0.420	
DD x Δ $D_{i.t}$ x FAMILY	-0.0091	-0.199		-0.0381	-0.770		-0.0142	-0.317	
FS	0.0038	2.534	**	0.0043	2.565	**	0.0036	2.411	**
INV	0.0013	0.237		0.0053	1.158		0.0031	0.749	
DEBT	-0.0030	-0.254		-0.0048	-0.395		-0.0049	-0.439	
ROA	0.0317	0.277		-0.0206	-0.170		0.0022	0.021	
TAX	-0.4580	-1.589		-0.4892	-1.527		-0.4448	-1.545	
BOARD	0.0004	0.036		-0.0053	-0.422		0.0000	0.003	
Industry dummy	Yes			Yes			Yes		
Year dummy	Yes			Yes			Yes		
N	387			387			387		
Adjusted R^2	0.070			0.189			0.217		
F-test	0.759								
Hausman test				31.81					

*** Significantly different from zero at the 1% level
** Significantly different from zero at the 5% level

Table 5 - Regression of payout on family firms

This table reports the regression of firm specific variables on the payout ratio. The sample is composed by dividend changes from 1991 to 2010 for Portuguese non-financial listed firms on the EL. PAYOUT is measured as ordinary dividends divided by net income before extraordinary items; FAMILY is a dummy variable that takes value 1 if the firm is a family firm and zero otherwise; Family firms are those in which the founding family or family member controlled 20 per cent or more equity, and was involved in the top management of the firm; FS is the natural logarithm of total assets; INV is the market value of common equity plus the book value of total assets minus common equity divided by the book value of total assets; DEBT is the ratio of total debt to total assets; ROA is the operating income before depreciation divided by the book value of assets; TAX is the tax paid, divided by total assets; BOARD is the proportion of independent directors on the board. The table presents the regression results for the OLS, FEM and REM models. It reports the F test, a test for the equality of sets of coefficients, and the Hausman (1978) test, a test with H_0: random effects are consistent and efficient, versus H_1: random effects are inconsistent, in order to choose the most appropriate model for each particular sample. The numbers in parentheses are the t-statistics corrected for heteroscedasticity using the White (1980) method.

$$PAYOUT_{i,t} = \alpha + \beta_1 \text{FAMILY}_{i,t} + \beta_2 \text{FS}_{i,t} + \beta_3 \text{INV}_{i,t} + \beta_4 \text{DEBT}_{i,t} + \beta_5 \text{ROA}_{i,t} + \beta_6 \text{TAX}_{i,t} + \beta_7 \text{BOARD}_{i,t} + \beta_8 \text{INDUSTRY}_{i,t} + \beta_9 \text{YEAR}_{i,t} + \varepsilon_{i,t}$$

	OLS results			FEM results			REM results		
	Coefficient	**t**		Coefficient	t		Coefficient	t	
Constant	11.233	-2.301	**	16.8468	2.682	***	14.1484	2.546	**
FAMILY	-0.2110	-2.333	**	1.65785	1.649		1.2882	1.472	
FS	-0.0518	-1.992	**	-0.2694	-0.928		-0.1845	-0.714	
INV	0.1631	1.501		-1.7143	-2.167	**	-1.5932	-2.231	**
DEBT	0.3600	1.643		-2.0535	-0.977		-0.4761	-0.248	
ROA	0.8383	0.428		25.8776	1.240		33.9521	1.831	*
TAX	10.166	0.167		-11.9047	-0.240		-22.0709	-0.501	
BOARD	0.2206	0.891		-2.8966	-1.316		-3.5867	-1.754	*
Industry dummy	Yes			Yes			Yes		
Year dummy	Yes			Yes			Yes		
N	389			389			389		
Adjusted R^2	0.101			0.255			0.290		
F-test	0.949								
Hausman test				29.31					

*** Significantly different from zero at the 1% level
** Significantly different from zero at the 5% level
* Significantly different from zero at the 10% level

Table 6 - Regression of market reaction on dividend change surprises

This table reports the regression of dividend change surprises on market's reaction. The sample is composed by dividend changes from 1991 to 2010 for Portuguese non-financial listed firms on the EL. $BHAR_3$ is the buy and hold accumulated abnormal return on the 3-day period as calculated by equation [2]; ΔDi,t, is the dividend per share change for year t; DI is a dummy variable that takes value 1 if dividend increases and zero otherwise, restricting the dividend increases to those events that experienced an earnings drop in the year of dividend increase announcement relative to the year before the announcement; DD is a dummy variable that takes value 1 if dividend decreases and zero otherwise; FAMILY is a dummy variable that takes value 1 if the firm is a family firm and zero otherwise, restricting the dividend decreases to those events that experienced an earnings rise in the year of dividend increase announcement relative to the year before the announcement; Family firms are those in which the founding family or family member controlled 20 per cent or more equity, and was involved in the top management of the firm; FS is the natural logarithm of total assets; INV is the market value of common equity plus the book value of total assets minus common equity divided by the book value of total assets; DEBT is the ratio of total debt to total assets; ROA is the operating income before depreciation divided by the book value of assets; TAX is the tax paid, divided by total assets; BOARD is the proportion of independent directors on the board. The table presents the regression results for the OLS, FEM and REM models. It reports the F test, a test for the equality of sets of coefficients, and the Hausman (1978) test, a test with H_0: random effects are consistent and efficient, versus H_1: random effects are inconsistent, in order to choose the most appropriate model for each particular sample. The numbers in parentheses are the t-statistics corrected for heteroscedasticity using the White (1980) method.

$$BHAR_{i,(\_1to\ +1)} = \alpha + \beta_1\, DI \times \Delta D_{i,0} \times FAMILY_{i,t} + \beta_2\, DD \times \Delta D_{i,0} \times FAMILY_{i,t} + \\ + \beta_3\, FS_{i,t} + \beta_4\, INV_{i,t} + \beta_5\, DEBT_{i,t} + \beta_6\, ROA_{i,t} + \beta_7\, TAX_{i,t} + \\ + \beta_8\, BOARD_{i,t} + \beta_9\, INDUSTRY_{i,t} + \beta_{10}\, YEAR_{i,t} + \varepsilon_{i,t}$$

	OLS results			FEM results			REM results		
	Coefficient	**t**		Coefficient	t		Coefficient	t	
Constant	-0.0893	-2.548	**	-0,0897	-2,452	**	-0,0693	-2,148	**
DI x Δ $D_{i,t}$ x FAMILY	0.0860	0.491		0,0075	1,463		0,0071	1,507	
DD x Δ $D_{i,t}$ x FAMILY	-0.0209	-0.310		-0,0036	-0,658		-0,0041	-0,805	
FS	0.0039	2.624	***	0,0040	2,345	**	0,0032	2,135	**
INV	0.0009	0.178		0,0057	1,249		0,0035	0,855	
DEBT	-0.0031	-0.266		-0,0058	-0,477		-0,0056	-0,507	
ROA	0.0317	0.277		-0,0722	-0,586		-0,0383	-0,353	
TAX	-0.4593	-1.592		-0,4834	-1,510		-0,4320	-1,487	
BOARD	0.0005	0.046		-0,0045	-0,352		0,0011	0,090	
Industry dummy	Yes			Yes			Yes		
Year dummy	Yes			Yes			Yes		
N	387			387			387		
Adjusted R^2	0.070			0.201			0.223		
F-test	0.754								
Hausman test				29.31					

*** Significantly different from zero at the 1% level
** Significantly different from zero at the 5% level

Table 7 - Regression of market reaction on dividend changes for the sub-samples of family and non-family firms

This table reports the regression of dividend changes on market's reaction for dividend changes from 1991 to 2010 for Portuguese non-financial listed firms on the EL, considering the sub-samples of family and non-family firms. Family firms are those in which the founding family or family member controlled 20 per cent or more equity, and was involved in the top management of the firm; $BHAR_3$ is the buy and hold accumulated abnormal return on the 3-day period as calculated by equation [2]; $\Delta Di,t$ is the dividend per share change for year t; DI is a dummy variable that takes value 1 if dividend increases and zero otherwise; DD is a dummy variable that takes value 1 if dividend decreases and zero otherwise; FS is the natural logarithm of total assets; INV is the market value of common equity plus the book value of total assets minus common equity divided by the book value of total assets; DEBT is the ratio of total debt to total assets; ROA is the operating income before depreciation divided by the book value of assets; TAX is the tax paid, divided by total assets; BOARD is the proportion of independent directors on the board. The table presents the regression results for the best model (OLS, FEM or REM). It reports the F test, a test for the equality of sets of coefficients, and the Hausman (1978) test, a test with H_0: random effects are consistent and efficient, versus H_1: random effects are inconsistent, in order to choose the most appropriate model for each particular sample. The numbers in parentheses are the t-statistics corrected for heteroscedasticity using the White (1980) method.

$$BHAR_{i,(\_1to\ +1)} = \alpha + \beta_1\, DI \times \Delta D_{i,0} \times FAMILY_{i,t} + \beta_2\, DD \times \Delta D_{i,0} \times FAMILY_{i,t} + \\ + \beta_3\, FS_{i,t} + \beta_4\, INV_{i,t} + \beta_5\, DEBT_{i,t} + \beta_6\, ROA_{i,t} + \beta_7\, TAX_{i,t} + \\ + \beta_8\, BOARD_{i,t} + \beta_9\, INDUSTRY_{i,t} + \beta_{10}\, YEAR_{i,t} + \varepsilon_{i,t}$$

	Family Firms		**Non-family Firms**	
	REM results		**REM results**	
	Coefficient	**t**	**Coefficient**	**t**
Constant	-0.0567	-0.564	-0.0430	-0.718
DI x Δ $D_{i.t}$	0.0369	1.015	0.0097	0.995
DD x Δ $D_{i.t}$	-0.0567	-1.280	-0.0071	-0.725
FS	0.0013	0.278	0.0025	0.925
INV	-0.0004	-0.063	0.0050	0.751
DEBT	0.0246	1.375	-0.0316	-1.378
ROA	0.1638	1.224	0.0497	0.200
TAX	-0.4688	-1.311	-10.076	-1.672 *
BOARD	-0.0003	-0.005	0.0070	0.181
Industry dummy	Yes		Yes	
Year dummy	Yes		Yes	
N	250		137	
Adjusted R^2	0.392		0.643	
F-test	2.95	***	2.23	***
Hausman test	18.49		17.23	

*** Significantly different from zero at the 1% level
* Significantly different from zero at the 10% level

Table 8 - Regression of payout on family firms for the sub-samples of family and non-family firms

This table reports the regression of firm specific variables on the payout ratio for dividend changes from 1991 to 2010 for Portuguese non-financial listed firms on the EL, considering the sub-samples of family and non-family firms. Family firms are those in which the founding family or family member controlled 20 per cent or more equity, and was involved in the top management of the firm; PAYOUT is measured as ordinary dividends divided by net income before extraordinary items; FS is the natural logarithm of total assets; INV is the market value of common equity plus the book value of total assets minus common equity divided by the book value of total assets; DEBT is the ratio of total debt to total assets; ROA is the operating income before depreciation divided by the book value of assets; TAX is the tax paid, divided by total assets; BOARD is the proportion of independent directors on the board. The table presents the regression results for the best model (OLS, FEM or REM). It reports the F test, a test for the equality of sets of coefficients, and the Hausman (1978) test, a test with H_0: random effects are consistent and efficient, versus H_1: random effects are inconsistent, in order to choose the most appropriate model for each particular sample. The numbers in parentheses are the t-statistics corrected for heteroscedasticity using the White (1980) method.

$$PAYOUT_{i,t} = \alpha + \beta_1 \text{FAMILY}_{i,t} + \beta_2 \text{FS}_{i,t} + \beta_3 \text{INV}_{i,t} + \beta_4 \text{DEBT}_{i,t} + \beta_5 \text{ROA}_{i,t} + \beta_6 \text{TAX}_{i,t} + \beta_7 \text{BOARD}_{i,t} + \beta_8 \text{INDUSTRY}_{i,t} + \beta_9 \text{YEAR}_{i,t} + \varepsilon_{i,t}$$

	Family Firms			**Non-family Firms**		
	FEM results			**OLS results**		
	Coefficient	**t**		**Coefficient**	**t**	
Constant	9.3281	0.343		6.9027	1.436	
FS	-0.4030	-0.301		-0.3205	-1.460	
INV	-6.0443	-3.875	***	-0.6268	-1.241	
DEBT	6.7582	1.515		1.4760	0.803	
ROA	11.3920	3.619	***	3.9465	2.028	**
TAX	-1.3430	-1.558		-4.9818	-1.237	
BOARD	-2.9784	-1.170		-1.4574	-0.468	
Industry dummy	Yes			Yes		
Year dummy	Yes			Yes		
N	250			139		
Adjusted R^2	0.383			0.208		
F-test	1.53		**	1.10		
Hausman test	53.79		***	37.98		***

*** Significantly different from zero at the 1% level
** Significantly different from zero at the 5% level

Table 9 - Regression of market reaction on dividend change surprises for the sub-samples of family and non-family firms

This table reports the regression of dividend changes on market's reaction for dividend changes from 1991 to 2010 for Portuguese non-financial listed firms on the EL, considering the sub-samples of family and non-family firms. Family firms are those in which the founding family or family member controlled 20 per cent or more equity, and was involved in the top management of the firm; $BHAR_3$ is the buy and hold accumulated abnormal return on the 3-day period as calculated by equation [2]; ΔDi,t, is the dividend per share change for year t; DI is a dummy variable that takes value 1 if dividend increases and zero otherwise, restricting the dividend increases to those events that experienced an earnings drop in the year of dividend increase announcement relative to the year before the announcement; DD is a dummy variable that takes value 1 if dividend decreases and zero otherwise; FS is the natural logarithm of total assets; INV is the market value of common equity plus the book value of total assets minus common equity divided by the book value of total assets; DEBT is the ratio of total debt to total assets; ROA is the operating income before depreciation divided by the book value of assets; TAX is the tax paid, divided by total assets; BOARD is the proportion of independent directors on the board. The table presents the regression results for the best model (OLS, FEM or REM). It reports the F test, a test for the equality of sets of coefficients, and the Hausman (1978) test, a test with H_0: random effects are consistent and efficient, versus H_1: random effects are inconsistent, in order to choose the most appropriate model for each particular sample. The numbers in parentheses are the t-statistics corrected for heteroscedasticity using the White (1980) method.

$$BHAR_{i,(\_1to\ +1)} = \alpha + \beta_1\ DI \times \Delta D_{i,0} \times FAMILY_{i,t} + \beta_2\ DD \times \Delta D_{i,0} \times FAMILY_{i,t} + \\ + \beta_3\ FS_{i,t} + \beta_4\ INV_{i,t} + \beta_5\ DEBT_{i,t} + \beta_6\ ROA_{i,t} + \beta_7\ TAX_{i,t} + \\ + \beta_8\ BOARD_{i,t} + \beta_9\ INDUSTRY_{i,t} + \beta_{10}\ YEAR_{i,t} + \varepsilon_{i,t}$$

	Family Firms		**Non-family Firms**	
	FEM results		**FEM results**	
	Coefficient	**t**	**Coefficient**	**t**
Constant	-0.0375	-0.311	-0.0857	-0.281
DI x Δ $D_{i.t}$	0.0107	1.431	0.0048	0.471
DD x Δ $D_{i.t}$	0.0052	0.772	-0.0067	-0.691
FS	0.0006	0.102	0.0048	0.309
INV	-0.0010	-0.142	0.0037	0.463
DEBT	0.0217	1.102	0.0131	0.313
ROA	0.1487	1.065	-0.2896	-1.029
TAX	-0.4714	-1.278	-0,3674	-0,548
BOARD	0.0017	0.134	0,0038	0,103
Industry dummy	Yes		Yes	
Year dummy	Yes		Yes	
N	250		137	
Adjusted R^2	0.382		0.633	
F-test	2.87	***	2.40	***
Hausman test	53.29	***	83.39	***

*** Significantly different from zero at the 1% level