SIGNALLING WITH DIVIDENDS? NEW EVIDENCE FROM EUROPE

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ABSTRACT

According to the dividend signalling hypothesis, dividend change announcements trigger share returns because they convey information about management's assessment on firms' future prospects.

We analyse the classical assumptions of the dividend signalling hypothesis, using data from three European countries. The evidence gives no support to a positive relation between dividend change announcements and the market reaction for French firms, and only weak support for the Portuguese and UK firms. After accounting for non-linearity in the mean reversion process, the global results do not give support to the assumption that dividend change announcements are positively related with future earnings changes.

We also formulate two hypotheses in order to explore the *window dressing* phenomenon and the maturity hypothesis, finding some evidence in favour of both, especially in the UK market.

Key Words: *Cash Dividends, Maturity Hypothesis, Signalling Hypothesis*

JEL Classification: G35, G32

[1] This paper is based on Vieira's doctoral dissertation. We thank Maria Carapeto, José Miguel Gaspar and José Dias Curto for useful comments, as well as participants at the 2007 EFMA conference. All remaining errors are the sole responsibility of the authors. Financial support from PRODEP is gratefully acknowledged.

1. INTRODUCTION

One of the most important assumptions of the signalling hypothesis is that dividend change announcements are positively correlated with share price reactions and future changes in earnings.

Miller and Modigliani (1961) sustain that, in a perfect capital market, firm value is independent of the dividend policy. However, some years latter, Bhattacharya (1979), John and Williams (1985) and Miller and Rock (1985) developed the signalling theory classic models, showing that, in a world of asymmetric information, better informed insiders use the dividend policy as a costly signal to convey their firm's future prospect to less informed outsiders. So, a dividend increase signals an improvement on firm's performance, while a decrease suggests a worsening of its future profitability. Consequently, a dividend increase (decrease) should be followed by an improvement (reduction) in a firm's profitability, earnings and growth. Moreover, there should be a positive relationship between dividend changes and subsequent share price reaction.

There have been a significant number of empirical tests showing that dividend change announcements are positively associated with share returns in the days surrounding the dividend change announcement. Pettit (1972, 1976) found strong support that dividend change announcements convey information to the market. Similar results were obtained by several authors, such as Aharony and Swary (1980), Benesh, Keown and Pinkerton (1984) and Dhillon and Johnson (1994) for dividend change announcements, Asquith and Mullins (1983) for dividend initiations, Lee and Ryan (2000, 2002) for dividend initiations and omissions and Lippert, Nixon and Pilotte (2000) for dividend increase announcements. Although all these studies were carried out for the American market, Travlos, Trigeorgis and Vafaes (2001) analyzed the market of Cyprus, Gurgul, Madjosz and Mestel (2003), the Austrian market, and Yilmaz and Gulay (2006), the Turkish market, finding also support for the dividend information content hypothesis.

Although there is empirical evidence supporting the positive relationship between dividend change announcements and the subsequent share price reaction, some studies have cast doubt on this idea. Studies by Lang and Litzenberger (1989) and Benartzi, Michaely and Thaler (1997) for the American market, Conroy, Eades and Harris (2000) for the Japanese market, Chen, Firth and Gao (2002) for the Chinese market and

Abeyratna and Power (2002), for the United Kingdom, find no evidence of a significant relationship between dividend announcements and share returns.

It is well documented that dividend change announcements are positively associated with future earnings. Aharony and Dotan (1994), Chen and Wu (1999), Nissim and Ziv (2001), Arnott and Asness (2001, 2003), Harada and Nguyen (2005), Baker, Mukherjee and Paskelian (2206), Stacescu (2006) and Vivian (2006), among others, analysed the case of dividend changes, concluding that there is a strong association between dividend changes and subsequent earnings. Similar results were obtained by Lipson, Maquieira and Megginson (1998) for the case of dividend initiations, and by Dhillon, Raman and Ramírez (2003) that have considered dividend analysts forecasts in order to determine dividend surprises.

However, many empirical studies have failed to support this idea. Studies by Watts (1973), DeAngelo, DeAngelo and Skinner (1992, 1996), Benartzi, Michaely and Thaler (1997), Grullon, Michaely and Swaminathan (2002), Benartzi *et al.* (2005) and Lie (2005) find little or no evidence that dividend changes predict abnormal increases in earnings.

Using a sample of three very different European markets, Portugal, France and the UK, we try to provide further evidence on the roles of the dividend signalling hypotheses in explaining the information content of dividend change announcements, as well as on the maturity hypothesis.

Globally, the empirical results do not give support to the dividend signalling content hypothesis, but we find some evidence for both the *window dressing* phenomenon and the maturity hypothesis, especially in the UK market.

The remainder of this paper is organised as follows. Section 2 presents the hypotheses. The sample selection is described in Section 3. Section 4 presents the empirical methodology and discusses the empirical results. Finally, section 5 provides the conclusion.

2. HYPOTHESES

In the first hypothesis, we analyse the relationship between dividend change announcements and the share price movements around dividend announcements. To do so, we formulate the following alternative hypothesis:

> *H_1: "Dividend changes are associated with a subsequent share price reaction in the same direction"*

This hypothesis reflects the signalling theory assumption that dividend announcements convey information to the market about firm's future profitability. Consistent with this theory, a positive relation should exist between dividend changes and the subsequent share price reaction.

In the second hypothesis, we examine the relationship between dividend change announcements and the firm's future profitability. The testable hypothesis, in its alternate form, is:

> *H_2: "Dividend increases (decreases) are associated with superior (inferior) future performance"*

Rejection of the null hypothesis associated with H_2 is consistent with the dividend signalling model assumption that management has proprietary information concerning the firm's future performance prospects.

We consider different measures of future performance, in order to examine distinct features of dividend policy. Consequently, we formulate several sub-hypotheses:

> *H_{2A}: "Dividend increases (decreases) are associated with future earnings increases (decreases)"*

> *H_{2B}: "Dividend increases (decreases) are associated with superior (inferior) future performance measures"*

> *H_{2C}: "Dividend increases are associated with superior operating performance, increases in capital expenditure and should experience an increase in sales growth"*

H_{2A} considers future earnings changes as future performance. Although we expect a positive relation between dividend changes and future earnings changes, the prior empirical evidence is not consistent.

H_{2B} considers as firms' future performance other accounting performance measures such as profitability measures (return on assets and return on equity), financial risk measures such as liquidity ratios and debt ratios, as well as a cash flow measure. This will allow us to address issues concerning the *window dressing* phenomenon. If we reject the null hypothesis associated with H_{2B}, and the relation between dividend changes and future performance measures is direct, the results will be consistent with the dividend signalling model. If we reject the null hypothesis associated with H_{2B} but the relation between the variables is negative, we can have evidence of the presence of the *window dressing* phenomenon. On the other hand, if we fail to reject the null hypothesis, it may suggest that dividends may not always contain information about future profitability.

Finally, H_{2C}, formulated according to the assumptions of dividend signalling models, analyses and confronts the maturity and the signalling hypotheses[2]. If we reject the null hypothesis associated with H_{2C}, and the relation between dividend changes and future measures considered in the hypothesis is direct, as the hypothesis predicts, the results will be consistent with the dividend signalling model. If we reject the null hypothesis associated with H_{2C} but the relation between the variables is negative, we can have evidence of the maturity hypothesis. On the other hand, if we fail to reject the null hypothesis, we will find no support for either the signalling or the maturity hypotheses.

3. SAMPLE SELECTION

We choose to examine different European markets, so we opt to explore the UK, the French and the Portuguese markets. Although they are all European markets, they are different from each other for several reasons.

Firstly, the UK is one of the most important European capital markets and is more comparable with US studies. The French and the Portuguese markets are smaller, particularly the last one, and they are less intensively researched. Secondly, we have

[2] Consistent with the maturity hypothesis suggested by Grullon, Michaely and Swaminathan (2002), a dividend increase may convey information about a decrease in investment opportunities, an expected decrease in the return on assets or a decrease in the earnings growth rate, conveying also information about the decrease of the systematic risk because of less riskier investments.

differences in these countries associated with the equity ownership, which is more concentrated in Portugal and France than in the UK. Thirdly, Portugal and France present a financial model based on a banking system, whereas the UK is more market-based, like the US. Finally, legal protection is also different in these countries. Whereas the UK is a country of Anglo-Saxon influence, the other two countries are characterised by a Continental European influence.

Given these features, we expect to find more similarity between the French and the Portuguese markets rather than between the UK and the other two markets, finding also weaker support to the dividend signalling theory in Portugal and France than in the UK. The claim here is that, in the UK, the agency conflict between firm insiders and dispersed shareholders would be more serious than in the other countries.

The sample is drawn from dividend announcements of firms listed on the Euronext Lisbon (EL), Euronext Paris (EP) and London Stock Exchange (LSE). Announcement dates are available on *Bloomberg* database and all other needed information is available on *Datastream* database. For the French and the UK markets, we consider the dividend announcements between 1994 and 2002, and for the Portuguese market we consider the dividend announcements between 1988 and 2002[3].

To be included in the final sample, the dividend announcements must satisfy the following criteria:

1) The firm is not a financial institution;
2) The firm is listed on the respective stock exchanges the year before and two years after the dividend events;
3) The company paid an ordinary dividend in the current and previous year;
4) The firm's financial data is available on the *Datastream* database (or the *Dathis* database in the case of Portugal) at the year before and two years after the dividend events and announcement dates are available on *Bloomberg* database;

[3] The year of 1994 is conditioned by the availability of announcement dates *on Bloomberg* database. For the Portuguese sample we consider a longer period, in order to maximise the number of observations, since this is a small market, with a small number of dividend events. Because *Bloomberg* and *Datastream* lack information on the Portuguese market, we obtain data from *Dhatis*, an EL database and we also needed to collect some financial statements directly from the companies.

5) For the Portuguese and French market, we consider that the 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. For the UK market we exclude all these announcements, except the case of earnings announcements[4].

Our sample events include dividend increases, no changes and decreases from 1995 to 2002 for the French and the UK markets and from 1989 to 2002 for the Portuguese market. Table 1 reports the number of dividend events classified by sample selection criteria. The Portuguese final sample contains 380 events: 158 increases, 121 decreases and 101 no change observations. The French final sample has 356 events: 235 increases, 62 decreases and 59 no change observations. Finally, the UK sample contains 3,278 events: 2,662 increases, 273 decreases and 343 no change events. The preponderance of dividend increases over no-change and decreases in the three samples is consistent with prior results that firms are reluctant to cut dividends[5]. The French and the UK percentage of dividend changes, especially the case of the UK sample, are similar to the ones of Abeyratna and Power (2002), for the UK market. Portuguese percentages are similar to the ones of some emergent markets, such as Thailand and Korea, as we can see below:

			Percentage of Dividends		
Study	**Market**	**Period**	**Increases**	**No-Change**	**Decreases**
Our Study	Portugal	1989-2002	41.6	26.6	31.8
	France	1995-2002	66.0	16.6	17.4
	UK	1995-2002	81.2	10.5	8.3
Nissim and Ziv (2001)	US	1963-1997	38.1	59.7	2.2
Abeyratna and Power (2002)	UK	1989-1993	75.0	15.7	9.3
Gurgul, Majdosz and Mestel (2003)	Austria	1992-2002	42.3	42.3	15.4
Aivazian, Booth and Cleary (2003b)	Thailand	1981-1990	47.0	22.6	30.4
	Korea	1981-1990	42.0	14.6	43.4
	Malaysia	1981-1990	37.0	31.6	31.4

Samples of several studies in different markets

[4] For the UK market, dividends and earnings are usually announced in the same date. We, therefore, exclude the dividend events for which dividends and earnings information were announced on separate dates, which is a small number (6 events). In addition, we need to adapt the methodology in order to separate the two effects (dividends and earnings).

[5] We emphasise, for the Portuguese sample, the significant number of dividend decreases (about 32% of sample events). One possible explanation for these sample statistics may be the exposure of emerging and Portuguese markets to more economic risks.

Table 2 provides summary statistics on dividend events and some financial ratios. We consider changes in dividends per share, DPS, both in monetary units and in percentage, the payout ratio (the ratio of the DPS to the earnings before extraordinary items per share) and the dividend yield (DPS divided by the share price on the day before the dividend announcement). We analyse the debt ratio (computed as the total debt divided by the total assets), the return on equity (calculated as the earnings before extraordinary items divided by the equity) and the current ratio (computed as the current asset divided by the current debt). All the accounting variables are considered at the end of the fiscal year before the dividend announcement.

Comparing the values of each group of dividend events, the results show that for all the countries, dividend decrease events are associated with a weaker financial position than dividend increases, with higher debt ratios and lower ROE. Firms that neither cut nor increase their dividends are in a middle range. Finally, comparing the three sample statistics, we can see that, for all the events, the UK sample has higher DPS, is the most profitable sample, and presents the lowest value for the debt ratio, which is in agreement with a developed capital market, such as the US.

Similar to DeAngelo and DeAngelo (1990) and Nissim and Ziv (2001), we observe that for all the countries the dividend increases, although more frequent than dividend decreases, are smaller in magnitude. In fact, the average decrease in DPS (percentage of change in DPS) is 0.35 euros (42.20%), compared with an average increase in dividends of nearly 0.19 euros (37.57%) in Portugal. In France, the average decrease in DPS (percentage of change in DPS) is 0.36 euros (23.74%), compared with an average increase in dividends of nearly 0.25 euros (26.37%) and finally, in the UK market, the average decrease in DPS (percentage of change in DPS) is 2.27 pounds (27.16%), compared with an average increase in dividends of nearly 1.05 pounds (19.94%).

Overall, the evidence indicates that the UK is the main capital market of our sample and Portugal is the smallest one, leaving France in a middle position.

4. METHODOLOGY AND EMPIRICAL RESULTS

Our samples are an unbalanced panel data set. Employing the panel data methodology, we use the three common estimation techniques, which are the pooled ordinary least squares (OLS), the fixed effects model (FEM), and the random effects model (REM). Subsequently, we use an F-statistic and the Hausman (1978) test to choose the most appropriate model for our samples. We present the standard errors corrected for heteroscedasticity and covariance, based on White's (1980) heteroscedasticity consistent standard errors method.

We start by testing for the stability in the dividend policy of the different European countries considered in our study. Based on Omet (2004), we use the following model:

$$D_{i,t} = \alpha_i + \beta_1 \text{ EPS}_{i,t} + \beta_2 \text{ D}_{i,t-1} + \varepsilon_{i,t} \quad [1]$$

where:

$D_{i,t}$ = dividend per share i announced in year t;
$D_{i,t-1}$ = dividend per share i announced in year t-1;
$EPS_{i,t}$ = earnings per share i in year t.

For this test, we consider the total number of cash dividend during the sample period, excluding dividend events with missing data. This model allows checking if the sample firms follow stable cash dividend policies and compare our conclusion with the results of Lintner's (1956) classical paper, as well as with other recent studies.

Table 3 reports the estimates of Lintner's model[6]. We report, for each country, the most appropriate specification of Lintner's model, which is the OLS, for Portugal, and the FEM, for the French and the UK samples.

For the Portuguese sample, we can see that the value of the constant term is positive and significant, being an indication that firms are reluctant to decrease their cash dividends, preferring to increase them gradually. However, the value of the lagged dividends coefficient is positive (0.197) but not statistically significant, showing no evidence that the lagged dividends determine the dividend policy. For the US market, Dewenter and Warther (1998) found a value of 0.945 for this coefficient and Aivazian, Booth and Cleary (2003a) found the value of 0.878. For Jordanian firms (an emerging market) Omet (2004) found a coefficient of lagged dividends of 0.480 and Aivazian, Booth and Cleary (2003a) found coefficients for emerging markets ranging from 0.083 (Turkey) to

[6] We exclude the firms which did not have at least five years of cash dividend to have enough cash dividend years for testing stability [Dewenter and Wharther (1998)].

0.611 (Zimbabwe). Benzinho (2004) found a value of 0.352 for the Portuguese market[7]. The results suggest that Portugal firms do not smooth their dividends and that the dividend policy for the US firms is more easily predictable than in Portugal. Finally, the earnings per share coefficient, although statistically significant, is low (0.079), especially when compared with the one of the US (0.170). In the emerging markets, the values range from 0.034 (Korea) to 0.446 (Turkey). Benzinho (2004) found a coefficient similar to ours, of 0.078.

Turning to the French sample, the value of the lagged dividend per share is statistically insignificant. The speed of adjustment in this market is one of the highest, of 0.94, near the +1 limit in which firms do not smooth dividends. The earnings per share coefficient, is 0.046. Although statistically significant, it is lower than the one found for the Portuguese sample. On the whole, these results suggest that, in accordance to the Portuguese results, dividend policy in France is not about smoothing dividends.

Finally, Lintner's model works remarkably well for the UK firms with an adjusted R^2 of 94.4%, suggesting that dividend policy for the UK firms is highly predictable. The coefficient of the lagged dividend per share is positive and statistically significant, with a value of 0.800, which is similar to the ones found in the US market by Dewenter and Warther (1998) and, by Aivazian, Booth and Cleary (2003a). This result is an indication that, like US firms, UK firms smooth dividends. The earnings per share coefficient is not significant. Overall, we find evidence supporting the Lintner smoothing model, suggesting that dividend policy for the UK firms, in accordance with the US firms, is highly predictable.

Comparing the three countries, we find evidence supporting the Lintner model only for the UK, suggesting this market smoothes dividends. As expected, dividend policy plays a less significant role in signalling in Portugal and France, than in the UK. Goergen, Renneboog and Silva (2005) conclude that in Germany (civil law country, as Portugal and France), because of the concentrated ownership, firms may not need to use dividends as a signal, which is in agreement with our conclusion.

[7] Benzinho (2004) has a sample of 34 firms and a total of 335 observations, for the period between 1990 and 2002, and he opts for the REM.

4.1. HYPOTHESIS 1: SHARE PRICE REACTION TO DIVIDEND CHANGE

We assume that dividends follow a random walk, so the dividend changes were used as the proxy for the unexpected dividend changes[8]. We need to adapt the methodology when analysing the UK sample, as UK firms usually announce both dividends and earnings simultaneously, making it difficult to separate out the dividend announcement effect from that of earnings. However, it gives the opportunity to incorporate the interaction of the joint signals into the analysis. Therefore, for the UK market, the impact of earnings announcements is examined by dividing the total sample into six categories: dividend increase-earnings increase (DIEI), dividend increase-earnings decrease (DIED), dividend no-change-earnings increase (DNCEI), dividend no-change-earnings decrease (DNCED), dividend decrease-earnings increase (DDEI), and dividend decrease-earnings decrease (DDED). In the analysis, we split the UK sample into these groups, or consider dummy variables that distinguish the different situations in the regressions, in order to isolate the impact of dividend announcements and investigate whether dividends provide information beyond that provided by earnings announcements.

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[9]:

$$\Delta D_{i,t} = \frac{D_{i,t} - D_{i,t-1}}{P_{i,0}} \qquad [2]$$

where:

$\Delta D_{i,t}$ = change of dividend per share i for year t;
$P_{i,0}$ = price of share i in the announcement day.

The announcement effect exists if abnormal returns are significant. To measure the market reaction to dividend change announcements we opt to consider two approaches to determine the abnormal returns.

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[8] We analyse the annual dividends as *Datastream* only provides the total yearly DPS.

[9] Although deflating the dividend change by the prior dividend is not unusual, deflating by price is more prevalent in the literature and is likely to be a better measure. See Nissim (2003) for an extensive discussion of the merits of normalizing the change in dividends by price per share.

Firstly, we measure the market reaction to dividend change announcements considering the abnormal returns calculated through the capital asset pricing model (CAPM):

$$AR_{i,t} = \mathrm{R}_{\mathrm{i,t}} - \left[\mathrm{R}_{\mathrm{f,t}} + \beta_{\mathrm{i}} \left(\mathrm{R}_{\mathrm{m,t}} - \mathrm{R}_{\mathrm{f,t}}\right)\right] \quad [3]$$

where:

$AR_{i,t}$ = abnormal return for share i in day t;
$R_{i,t}$ = return for share i in day t;
$R_{f,t}$ = risk-free rate in day t;
$R_{m,t}$ = market return for day t;
β_i = systematic risk of share i.

The parameter β_i, measured as [cov ($R_{i,t}$,$R_{m,t}$)/var ($R_{m,t}$)], is estimated for each share, by an OLS regression based on market model, considering the period from day t = -120 to day = +120, excluding the 31 days around dividend announcements (t = -15 to t = +15). The 3-day cumulative abnormal return (CAR) is used to measure the market reaction to the dividend announcements and is calculated surrounding the announcement date as:

$$CAR_{i,t} = \sum_{t=-1}^{t=1} (\mathrm{AR}_{\mathrm{i,t}}) \quad [4]$$

where t = 0 is the dividend announcement day in the stock exchange journal. If the information content hypothesis is correct, the CAR should be significantly different from zero.

The second approach consists of determining the abnormal returns according to the buy-and-hold abnormal returns (BHARs). The abnormal return for a share is defined as the geometrically compounded 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 [$BHAR_{i\,(-1\text{ to }+1)}$] generating model takes the following form:

$$BHAR_{i(-1\,to\,+1)} = \prod_{t=-1}^{1}(1+R_{i,t}) - \prod_{t=-1}^{1}(1+R_{m,t}) \quad [5]$$

To explore the relation between the wealth effect and dividend changes, the market's reaction to dividend change announcements is regressed against dividend changes. For the Portuguese and French samples, the following regression model is estimated:

$$CAR3_i = \alpha + \beta_1 \text{ DI x } \Delta \mathrm{D}_{\mathrm{i,0}} + \beta_2 \text{ DD x } \Delta\mathrm{D}_{\mathrm{i,0}} + \varepsilon_{i,t} \quad [6a]$$

where:

$CAR3_i$	=	cumulative abnormal return for share i on the 3-day period, as formulated in the 2 approaches: equations [4] and [5];
DI	=	dummy variable that takes value 1 if dividend increases and zero otherwise;
DD	=	dummy variable that takes value 1 if dividend decreases and zero otherwise.

If dividend changes convey information about a firm's future prospects, as suggested by the dividend information content hypothesis, we expect β_1 and β_2 to be positive and statistically significant. In what concerns the UK sample, we need to adapt equation [6a] in order to capture the influence of interactive dividend and earnings signals on the cumulative abnormal return of the sample events. For this purpose, the regression is adapted in the following way:

$$CAR3_i = \alpha + \beta_1 \text{ DIEI x } \Delta \text{ D}_{i,0} + \beta_2 \text{ DIED x } \Delta\text{D}_{i,0} + \beta_3 \text{ DDEI x } \Delta \text{ D}_{i,0} + \\ + \beta_4 \text{ DDED x } \Delta \text{ D}_{i,0} + \varepsilon_{i,t} \quad [6b]$$

In the regression, variables DIEI, DIED, DDEI and DDED are dummy variables which take the value of 1 if the situation expressed by the letters is true, and zero otherwise. The coefficients β_1 to β_4 represent the influence of the dividend changes on the performance measured, conditioned on the earnings behaviour.

Table 4 provides the abnormal returns for the announcement period and other different periods. Panel A presents the market adjusted BHAR for dividend announcements[10]. Panel B shows the cross-sectional distribution of the three-day abnormal returns based on the BHAR results, the one that is common to all three samples.

In what concerns the Portuguese sample (Panel A), for the event period and the dividend no change announcements, we find a non-significant BHAR. This supports the hypothesis that firms that leave their dividends unchanged communicate no significant new information to the market. In what concerns dividend change announcements, although dividend increases and decreases show, respectively, a positive and a negative return on the announcement period - which is the expected signal - the returns are only statistically significant for the case of dividend decreases, at a 10% level. The result concerning dividend decrease announcements suggest that they convey relevant information to the market. However, the lack of reaction when dividend increases are

[10] We calculate the cumulative abnormal returns, based on the CAPM and the results were similar. For simplicity reasons, we do not report the results. However, they are available from authors upon request.

announced suggests that dividend increase announcements contain less relevant information than do dividend decrease announcements. The market reaction asymmetry between dividend increase and decrease announcements was also found by several authors, such as Aharony and Swary (1980) and Nissim and Ziv (2001). One feasible reason is the managerial reluctance to cut or omit dividends.

Concerning the other periods considered, dividend no changes has a significant value for the abnormal return in the period preceding the announcement date (-5 to -2), indicating market anticipation. The market reaction to dividend decrease announcements is reinforced in the period -2 to +2, since the abnormal return is significant at 1%, which suggests that the market reacts in the five days surrounding the announcement date. Finally, it seems that the market reacts later in the case of dividend increase announcements, since the BHAR value is statistically different from zero in the period (+2 to +5), which suggests some inefficiency of the market.

In what concerns the French sample, all CARs for the announcement period present insignificant values. This evidence is similar to Lasfer and Zenonos (2004) who also obtain statistically insignificant share price reactions around the dividend announcement dates in this market. The insignificant abnormal returns on the announcement period could be attributed to the low levels of information asymmetry, as firms tend to be family owned, with bank-based systems and with high ownership concentration.

Overall, the results are in accordance with the ones of the Portuguese sample, suggesting that the need to use dividends as a signalling device must be less pronounced in France and in Portugal than in the US and UK.

We divide the UK sample into 6 categories, as we have mentioned before. A summary of descriptive statistics for these groups is provided below:

Category	**Nº of observations**	**% of the events**	**% of total observations**
DIEI	1,931	72.5	58.9
DIED	731	27.5	22.3
DI	2,662	100.0	81.2
DNCEI	141	41.1	4.3
DNCED	202	58.9	6.2
DNC	343	100.0	10.5
DDEI	108	39.6	3.3
DDED	165	60.4	5.0
DD	273	100.0	8.3
Total	3,278		100.0

Summary descriptive statistics for the six group events of the UK sample

The DIEI group dominates the entire sample (58.9 percent), with the DIED, DNCED and DDED groups each representing a minority of the total number of events studied. Our relative values are similar to the ones found by Abeyratna and Power (2002).

The abnormal returns for the UK sample are also presented in Panel A of Table 4, but considering the different six groups defined above. The abnormal returns for the three-day announcement period only support the dividend-signalling hypothesis for the dividend increase events. The DIEI and DIED samples earned statistically significant positive abnormal returns of, respectively, 1.74% and 1.92%. These results are similar to several tests made in the US and the UK, namely the ones found by Abeyratna and Power (2002) and Lasfer and Zenonos (2004) for the UK market. The other events present exceptions to the results expected by the dividend-signalling hypothesis. Both the dividend no-change groups as well as the dividend decrease groups present a significant positive excess return. If no dividend news is being signalled to the market, one might assume that no abnormal share price movements are expected. However, in the DNCEI case, we might suppose that the earnings increase announcement has a stronger power than the dividend no-change announcements, and the prices go up by the influence of the earnings increase, which may be an indication that earnings have an information utility behind that of the dividend announcements. But in contrast with this indication, the DNCED group also has a positive and significant abnormal return. Abeyratna and Power (2002) found also positive excess returns for these two groups, but they found no significant values. Similar to the conclusion of Lonie *et al.* (1996), this could happen because investor's doubts about dividends disappear when firms announce dividends maintenance.

One surprising result is that dividend decreases brought on positive reactions. Indeed, the dividend decrease results are in contrast with several works that found a negative and significant abnormal return for dividend decrease announcements, such as Dhillon and Johnson (1994) and Grullon, Michaely and Swaminathan (2002) for the US market and Abeyratna and Power (2002) and Lasfer and Zenonos (2004) for the UK market. However, these last authors found a negative value for the DDED group, but a positive abnormal return for the DDEI sample, although not statistically significant, which is mentioned by them as an exception to the dividend-signalling hypothesis. Perhaps this is an indication that dividend decreases not always reveal bad news, sending, sometimes, good news to the market. The investors might interpret them as an attempt to keep resources for future growth opportunities [Mozes and Rapaccioli (1998)] or an effort from managers to solve financial problems. Moreover, the dividend decreases could also be smaller than expected by the market, which reacts positively [Abeyratna and Power (2002)]. All excess returns are statistically significant in the periods -2 to +2 and -5 to +5, which suggests that the market reacts also in a longer period surrounding the announcement date.

Overall, the results of the abnormal returns for the UK market are in accordance with the dividend-signalling hypothesis only for the case of dividend increases samples. As in previous evidence, the market reacts strongly to dividend decreases announcements. The larger market reaction to dividend changes happens in the UK market, which is in accordance Miller and Rock (1985) opinion, as they suggested that firms whose shares have a larger reaction to dividends should be those that have a stronger information asymmetry, and the UK has higher information asymmetry than France and Portugal.

Panel B of Table 4 presents the cross-sectional distribution of the three-day abnormal returns for the three samples. Results show that for the dividend increase events, 45.57% of the cases for Portugal, 45.96% for France and 37.80% and 38.71% of the cases for the UK, respectively for the DIEI and DIED cases, have negative excess returns which is consistent with several authors that have found a negative perverse relationship between dividend change announcements and share prices reactions, such as Asquith and Mullins (1983), who found a value of 31.9%, Dhillon and Johnson (1994), 40%, and Healy, Hathorn and Kirch (1997) who found that 42.5% of the firms that initiate dividend payments have negative excess returns. Recently, Dhillon, Raman and Ramírez (2003) found that about 43% of the dividend increases announcements sample presents an adverse market reaction.

For the case of dividend decreases, results show that 39.67% (Portugal), 53.23% (France) and 57.41% and 59.39% of these events for the UK, respectively for the DDEI and DDED cases, have positive excess returns. Benesh, Keown and Pinkerton (1984) and Born, Moser and Officer (1988) have found that about 20 to 60% of the sample events presents a market positive reaction to dividend decrease announcements. Dhillon and Johnson (1994) and Sant and Cowan (1994) found, respectively, a percentage of 27% and 23.4% of the events with a positive reaction to dividend omission announcements. The high percentage of dividend decrease events with positive excess returns might explain the positive abnormal return mean we found in the UK market.

Vieira and Raposo (2007) explore the phenomenon of a negative relationship between dividend change announcements and the subsequent market return, showing that, for the UK market, there are some firm-specific factors contributing to explain the abnormal return. They conclude that firms with negative market reactions to dividend increase announcements have, on average, higher size, lower earnings growth rate and lower debt to equity ratios.

In order to analyse the relation between the wealth effect and dividend changes, we estimate equation [6]. The output from this regression is reported in Table 5. We show the results considering the dependent variable as BHAR (the one calculated for all the three samples). The OLS is the best model for the Portuguese and the French samples. For the UK sample, the best one is the REM.

For the Portuguese sample, we can see that, overall, the cross-sectional regression confirms the event study results. The negative slope, which captures the effects of no change announcements, is not statistically significant. The coefficients for dividend changes are positive, suggesting that the magnitude of the positive (negative) share price reaction increases with the intensity of the positive (negative) information being conveyed. However, only the coefficient on dividend increases is statistically significant at 1% level. This result suggests that dividend increases convey useful information to the market. Consequently, we reject the null hypothesis for dividend increases, supporting the dividend-signalling hypothesis only for this type of announcement. We cannot reject the null hypothesis in what concerns the dividend decreases, thus, it seems that the market does not understand the signal given by firms through dividend decrease announcements, or, at least, does not react.

For the French sample, the cross-sectional regression confirms the event study results. Since none of the coefficients are statistically significant, we cannot reject the null hypothesis and thus our results do not support the dividend-signalling hypothesis.

Finally, we analyse the UK results. The constant term is statistically significant, showing a significant impact of dividend no change announcements on market reaction, which is not predicted by the dividend-signalling hypothesis, but could be associated with investors' doubts disappearance about dividends. In what concerns the other coefficients, they are all statistically insignificant.

To evaluate the ***robustness*** of the results, we repeat the regression analysis using alternative deflators for dividend changes and alternative measures for the abnormal return. We consider the rate of change in dividend per share relative to the dividend of the previous year in spite of the share price and we consider the market-adjusted returns considering the BHAR model and β=1 for all firms. In all cases we obtain similar results[11], so our conclusions are kept unchanged.

The results so far do not allow rejecting the null hypothesis that dividend changes are not associated with a subsequent share price reaction in the same direction, at least for all the different types of dividend change announcements, so ***we do not find strong support to the dividend signalling hypothesis****. For the UK sample, our results seem to be closer to the conclusions of the authors that do not find evidence of a significant market reaction to dividend change announcements, such as Lang and Litzenberger (1989), Benartzi, Michaely and Thaler (1997), and, more recently, Conroy, Eades and Harris (2000), Chen, Firth and Gao (2002) and Benartzi et al. (2005).*

4.2. HYPOTHESIS 2: DIVIDEND CHANGE AND FUTURE PERFORMANCE

To test the relation between dividend changes and future performance, we consider several measures of future performance as sub-hypotheses.

4.2.1. Sub-hypothesis 2A: Change in Earnings

We start by considering the future earnings changes, in order to analyse the relationship between dividend change announcements and future earnings changes.

We express annual earnings changes as the difference between earnings in year t and earnings in year t-1, scaled by the book value of equity at the end of year t-1[12]. The standardized change in earnings for share i in year t, $\Delta E_{i,t}$, is therefore defined as:

$$\Delta E_{i,t} = \frac{(E_{i,t} - E_{i,t-1})}{BV_{i,t-1}} \qquad [7]$$

[11] For simplicity reasons, the results are not reported in the study but available from authors upon request.

[12] We scale earnings changes by the book value of equity in order to compare our results with the ones of Nissim and Ziv (2001) and Benartzi *et al.* (2005), among others. Moreover, see Nissim and Ziv (2001, p. 2117) for an explanation of the merits of deflating the earnings changes by the book value of equity.

where:

$E_{i,t}$	=	earnings before extraordinary items for share i in year t;
$BV_{i,t-1}$	=	book value of equity for share i at the end of year t-1.

We define year 0 as the fiscal year of the dividend announcement and use earnings before extraordinary items to eliminate the transitory components of earnings.

We examine the relation between dividend changes and future earnings changes based on Nissim and Ziv (2001). For the Portuguese and French markets, we consider the following regression:

$$
\begin{aligned}
(E_{i,\tau} - E_{i,\tau-1})/BV_{i,-1} = \alpha + \beta_1\, \text{DI x } \Delta \text{D}_{i,0} + \beta_2\, \text{DD x } \Delta\text{D}_{i,0} + \beta_3 ROE_{i,\tau-1} + \\
+ \beta_4\, (E_{i,0} - E_{i,-1})/BV_{i,-1} + \varepsilon_{i,t}
\end{aligned}
\qquad [8a]
$$

where:

$E_{i,\tau}$	=	earnings before extraordinary items for share i in year τ relative to the dividend event year (year 0);
τ	=	1 and 2;
$BV_{i,-1}$	=	book value of equity for share i at the end of year -1;
$ROE_{i,\tau-1}$	=	return on equity for share i, calculated as $E_{i,\tau-1}$/ $BV_{i,\tau-1}$.

For the UK market, we adapt the regression in order to consider the influence of interactive dividend and earnings signal on the future earnings changes:

$$
\begin{aligned}
(E_{i,\tau} - E_{i,\tau-1})/BV_{i,-1} = \alpha + \beta_1\, \text{DIEI x } \Delta \text{D}_{i,0} + \beta_2\, \text{DIED x } \Delta\text{D}_{i,0} + \\
+ \beta_3\, \text{DDEI x } \Delta \text{D}_{i,0} + \beta_4\, \text{DDED x } \Delta\text{D}_{i,0} + \beta_5 ROE_{i,\tau-1} + \\
+ \beta_6\, (E_{i,0} - E_{i,-1})/BV_{i,-1} + \varepsilon_{i,t}
\end{aligned}
\qquad [8b]
$$

Regression [8] includes return on equity and past changes in earnings to control for the mean reversion of earnings. However, these regressions assume that the relation between future earnings and past earnings levels and changes is linear, which is inappropriate. Consequently, we use the modified partial adjustment model suggested by Fama and French (2000) as a control for the non-linearity in the relation between future earnings changes and lagged earnings levels and changes. The model is the following:

$$
\begin{aligned}
(E_{i,\tau} - E_{i,\tau-1})/BV_{i,\ 1} = \alpha + \beta_1\, \Delta\text{D}_{i,0} + \begin{pmatrix} \gamma_1 + \gamma_2 NDFED_0 + \gamma_3 NDFED_0 * DFE_{i,0} + \\ \gamma_4 PDFED_0 * DFE_{i,0} \end{pmatrix} * \text{DFE}_{i,0} \\
+ \left(\lambda_1 + \lambda_2 NCED_0 + \lambda_3 NCED_0 * CE_{i,0} + \lambda_4 PCED_0 * CE_{i,0}\right) * \text{CE}_{i,0} + \varepsilon_{i,t}
\end{aligned}
\qquad [9]
$$

where:

$DFE_{i,0}$	=	$ROE_{i,0} - E[ROE_{i,0}]$;
$E[ROE_{i,0}]$	=	fitted value from the cross-sectional regression of $ROE_{i,0}$ on the log of total assets in year -1, the market-to-book ratio of equity in year -1, and $ROE_{i,-1}$;
$CE_{i,0}$	=	$(E_{i,0} - E_{i,-1}) / BV_{i,-1}$;
$NDFED_0$	=	dummy variable that takes value 1 if $DFE_{i,0}$ is negative and 0 otherwise;
$PDFED_0$	=	dummy variable that takes value 1 if $DFE_{i,0}$ is positive and 0 otherwise;
$NCED_0$	=	dummy variable that takes value 1 if $CE_{i,0}$ is negative and 0 otherwise;
$PCED_0$	=	dummy variable that takes value 1 if $CE_{i,0}$ is positive and 0 otherwise.

We consider regression [8], which allows for distinct coefficients on the different types of dividend events and controls for the earnings variations in the dividend change year. To examine whether dividend changes contain additional information on future earnings changes, we consider the earnings changes, deflated by the book value of equity as an additional control variable. Since we identify dividend events (dividend increases, decreases, and no-changes) up to 2002, and we have earnings data also until 2002, the sample includes dividend events that occurred until 2001 for τ=1 and until 2000 for τ=2.

Assuming linear mean reversion in earnings[13], we could not reject the null hypothesis that dividend increases (decreases) are not associated with future earnings increases (decreases) for both the Portuguese and the French samples. In the UK sample, we reject the null hypothesis for some of the coefficients on dividend changes, which is partially consistent with Nissim and Ziv (2001), Benartzi *et al.* (2005) and Dhillon, Raman and Ramírez (2003). Consequently, we find weak support for the information content of dividend hypothesis only for the UK market.

Table 6 reports the re-estimated coefficients of the regression models using the Fama and French (2000) methods in order to overcome the problem of the mean reversion process of earnings being non-linear, according to regression [9]. The best model for each regression is highlighted.

The results for the Portuguese sample show that only for the second year following the dividend changes (τ =2), the coefficient on dividend increases is statistically significant. For the French sample, none of the coefficients on dividend changes is statistically

[13] The results are not reported in the study, but available from authors upon request.

significant. For the UK sample, only for τ = 1 there are significant coefficients on dividend changes. Both the coefficients on dividend decreases, independently of the earnings changes, are negative and statistically significant. All the other coefficients are not significant. Consistent with the findings of Fama and French (2000) and Benartzi *et al.* (2005), this evidence indicates that the linear model misses some information about the behaviour of earnings that seems to be correlated with dividend changes.

Accounting for non-linearity in the mean reversion process, leads to the conclusion that changes in dividends are not very useful in predicting future earnings changes. In general, the ***results do not give strong support to the assumption of dividend signalling hypothesis that dividend change announcements are positively related with future changes in earnings****. These results are quite similar to the ones of Benartzi et al. (2005), who conclude that, after controlling for the non-linear patterns in the behaviour of earnings, dividend changes contain no information about future earnings.*

4.2.2. Sub-hypothesis 2B: ROA, ROE, D/E, Working Capital, Cash Flow

We consider a regression similar to [8], but with five different dependent variables measuring aspects of financial performance: two profitability measures (the return on assets (ROA) and ROE); a gearing measure (the debt to equity ratio D/E); a liquidity measure (working capital ratio, WCR) and a cash flow (CF) measure. The following regression model is estimated:

$$PM_{i,\tau} - PM_{i,\tau-1} = \alpha + \beta_1 \, \mathrm{DI} \times \Delta \mathrm{D}_{i,0} + \beta_2 \, \mathrm{DD} \times \Delta \mathrm{D}_{i,0} + \beta_3 \, \mathrm{PM}_{i,\tau-1} + \beta_4 \, (\mathrm{PM}_{i,0} - \mathrm{PM}_{i,-1}) + \varepsilon_{i,t} \qquad [10a]$$

where:

$PM_{i,\tau}$	=	profitability measure that consists of five financial performance measures (ROA, ROE, D/E, WCR and CF) at date τ;
τ	=	1 and 2;
$ROA_{i,\tau}$	=	return on assets for share i, computed as operating income before depreciation divided by book value of assets at the end of year τ;
$ROE_{i,\tau}$	=	return on equity for share i, at the end of year τ;
$D/E_{i,\tau}$	=	debt to equity ratio for share i, calculated as the book value of total debt divided by the total book capital at the end of year τ;
$WCR_{i,\tau}$	=	working capital ratio for share i, computed as total current assets divided by total current liabilities at the end of year τ;
$CF_{i,\tau}$	=	cash flow for share i, computed as operating income before depreciation minus interest expense, income taxes and preferred stock dividends scaled by the total assets at the end of year τ.

For the UK sample, we adapt the regression in the following way:

$$PM_{i,\tau} - PM_{i,\tau-1} = \alpha + \beta_1 \text{ DIEI x } \Delta \text{D}_{i,0} + \beta_2 \text{ DIED x } \Delta\text{D}_{i,0} + \beta_3 \text{ DDEI x } \Delta\text{D}_{i,0} + \\ + \beta_4 \text{ DDED x } \Delta\text{D}_{i,0} + \beta_5 \text{ PM}_{i,\tau-1} + \beta_6 (\text{PM}_{i,0} - \text{PM}_{i,-1}) + \varepsilon_{i,t} \qquad [10b]$$

The estimation results of regression [10] are shown in Table 7, from Panel A to Panel E, respectively for the profitability measures of ROA, ROE, D/E, WCR and CF. For simplicity reasons, we present only the best model for each regression, being in most of the regressions, the FEM. In almost all cases, the coefficients on the lagged performance measure are negative and statistically significant, showing a negative relationship between the lagged performance and the future change in these performance measures.

The most significant regressions are the regression on ROE for the UK, on WCR for Portugal and on Cash Flow for the French sample. However, globally, the results fail to reject the null hypothesis associated with H_{2B} for several coefficients on dividend changes for the three markets, in particular for the French market. It suggests that dividends may not always contain information about future profitability. Therefore, we do not find strong evidence of the dividend signalling hypothesis. For the cases in which we reject the null hypothesis, we find stronger evidence of a negative relationship between dividend changes and future performance measures. Thus, in general, our evidence gives no support to the dividend signalling hypothesis which predicts a positive association between dividend change announcements and subsequent performance measures. Instead, our results provide some support to the window dressing phenomenon and the maturity hypothesis [Grullon, Michaely and Swaminathan (2002)], as well as the free cash flow hypothesis [Jensen (1986)], since the evidence of declining return on assets is consistent with firms increasing their cash payouts in anticipation of a declining investment opportunity set as predicted by the free cash flow hypothesis.

4.2.3. Sub-hypothesis 2C: Operating Performance

In agreement with the signalling (maturity) hypothesis assumptions, we expect dividend increases to be associated with superior (inferior or, at least, not superior) operating performance, increases in capital expenditure (decreases or, at least, not increases) and with an increase (decrease) in sales growth.

We measure the operating performance by the ROA [Grullon, Michaely and Swaminathan (2002)], the capital expenditure (CE) is calculated as a percentage of the beginning-of-year total assets, and the sales growth rate (SG) is the change in sales as a percentage of previous year's sales. Our intention is to test if the variables' post-announcement behaviour is in agreement with the predictions of the signalling hypothesis or the maturity hypothesis.

We examine the determinants of the market reaction to dividend increase announcements and focus the analyses on the extent to which the market reaction anticipates the operating performance, capital expenditures and changes in sales growth. The following equation[14] is used to investigate these issues:

$$CAR3_i = \alpha + \beta_1 \Delta \mathrm{DI}_{i,0} + \beta_2 (ROA_{i,0} - ROA_{i,-1}) + \beta_3 \Delta ROA_{i,2} + \beta_4 (SG_{i,0} - SG_{i,-1}) + \\ + \beta_5 \Delta SG_{i,2} + \beta_6 (CE_{i,0} - CE_{i,-1}) + \beta_7 \Delta CE_{i,2} + \varepsilon_{i,t} \quad [11a]$$

where:

$\Delta \mathrm{DI}_{i,0}$	=	dividend increase changes per share i in the announcement year;
$\Delta \mathrm{ROA}_{i,2}$	=	measure of the abnormal change in profitability during the two years after dividend changes, computed as $(\Delta \mathrm{ROA}_{i,2} + \Delta \mathrm{ROA}_{i,1})/2 - \Delta \mathrm{ROA}_{i,0}$;
$\mathrm{SG}_{i,0}$	=	sales growth rate for share i, computed as a percentage of the previous year's sales;
$\Delta \mathrm{SG}_{i,2}$	=	change in SG during the two years after the dividend changes, computed as $(\Delta \mathrm{SG}_{i,2} + \Delta \mathrm{SG}_{i,1})/2 - \Delta \mathrm{SG}_{i,0}$;
$\mathrm{CE}_{i,0}$	=	capital expenditure for share i, calculated as capital expenditures to the beginning of year total assets;
$\Delta \mathrm{CE}_{i,2}$	=	change in CE during the two years after the dividend changes, computed as $(\Delta \mathrm{CE}_{i,2} + \Delta \mathrm{CE}_{i,1})/2 - \Delta \mathrm{CE}_{i,0}$.

For the UK sample, we adapt this regression in the following manner:

$$CAR3_i = \alpha + \beta_{1A} \Delta \mathrm{DIEI}_{i,0} + \beta_{1B} \Delta \mathrm{DIED}_{i,0} + \beta_2 (ROA_{i,0} - ROA_{i,-1}) + \beta_3 \Delta ROA_{i,2} + \\ + \beta_4 (SG_{i,0} - SG_{i,-1}) + \beta_5 \Delta SG_{i,2} + \beta_6 (CE_{i,0} - CE_{i,-1}) + \beta_7 \Delta CE_{i,2} + \varepsilon_{i,t} \quad [11b]$$

If investors, at least partially, recognise the relationship between current dividend increases and future changes in profitability, capital expenses and sales growth, then this should be reflected in the market reaction, and the coefficients will be significant. The

[14] The equation is based on Grullon, Michaely and Swaminathan (2002) model.

results of regression [11] are shown in Table 8, considering the market reaction as the BHAR measure[15].

We can see that the announcement period returns are negatively and significantly related to dividend increases in France. All the other coefficients on dividend increases are essentially zero. These results are consistent with the ones obtained in Table 5. In what concerns the performance coefficients, we can see a strong positive relationship between the market reaction and current, as well as future, capital expenditures for the two markets which consider these two variables in the regression: France and the UK in the sub-sample of DIEI. In the DIED sub-sample none of the coefficients are statistically significant. In the Portuguese sample, we find a strong negative relationship between the market reaction and current, as well as future, change in ROA. These results suggest that investors recognise some relationship between current dividend increases and future changes in profitability, in the case of the Portuguese sample, and capital expenditures, in the French and the UK markets. Grullon, Michaely and Swaminathan (2002) and Lai, Song and Fung (2004) found evidence of a strong negative relationship between CAR and future changes in return on assets, as we find in the Portuguese sample. The reason why the market reacts positively when investors anticipate a firm's future profitability to decline could be, as suggested by Grullon, Michaely and Swaminathan (2002, p. 438), *"an expected decrease in the agency costs of free cash flows"*[16]. This point of view is closer to the maturity hypothesis. However, the positive relationship between the market reaction to dividend increase announcements and current and future capital expenditures in the French and the UK samples showing that the market reacts positively when investors anticipate firm's capital expenditures to increase is closer to the signalling hypothesis. Investors can react positively to dividend increases expecting that managers have good prospects about future opportunities in positive NPV projects.

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[15] We consider also the CAR measure, and the results are similar. We have analysed the correlation between coefficients. For simplicity reasons, we do not report the results. However, they are available from authors upon request.

[16] When a firm is in the maturity stage, it is very likely that it has excess cash. The managers can either pay it out or invest the excess cash in projects with negative NPV. Investors may interpret the dividend increase announcements as good news that managers are not going to waste the excess resources investing in negative NPV projects.

Vieira (2005) split her dividend increases sample according to the post-announcement ROA: the top performance group, the middle and the bottom performance group, to see whether the signalling and the maturity hypothesis can co-exist. She found some evidence of the signalling hypothesis in the top performance group. Furthermore, she finds evidence that investors react differently to the two distinct groups in the Portuguese and in the French market (although in a weaker proportion in the last one). In the UK sample, a difference in behaviour is not so clear. These results give weak support to the evidence that the market reacts differently to the distinct groups. Her results are consistent with the ones of Lai, Song and Fung (2004).

5. CONCLUSIONS

Summarising the results, we reached the following main conclusions:

- The abnormal returns for the three-day announcement period only support the dividend content hypothesis for the dividend increase events in the UK market. This is in agreement with the expected results that the need to use dividends as a signalling device must be less pronounced in France and in Portugal than in the UK. The results obtained are consistent with several studies, namely Goergen, Renneboog and Silva (2005), Lasfer and Zenonos (2004) and Abeyratna and Power (2002);
- There are a significant percentage of cases where dividend change announcements and share price reactions move in opposite directions. This evidence is consistent with the findings of Dhillon and Johnson (1994), Sant and Cowan (1994) and Healy, Hathorn and Kirch (1997), among other authors;
- The regression results do not allow rejecting the null hypothesis that dividend changes are not associated with a subsequent market reaction in the same direction for all the different types of dividend change announcements, so we do not find strong support to the dividend signalling hypothesis. Our results seem to be closer to those authors who do not find evidence of a significant market reaction to dividend change announcements, such as Lang and Litzenberger (1989), Benartzi, Michaely and Thaler (1997), and, more recently, Conroy, Eades and Harris (2000), Chen, Firth and Gao (2002) and Benartzi *et al.* (2005);
- For the Portuguese and the French market, we find evidence that dividend change announcements have no influence on future earnings. For the UK market, we find only weak support for the information content of dividend hypothesis. The UK results

suggest that earnings announcements have information power beyond that of dividend announcements, consistent with the findings of Lonie *et al.* (1996), DeAngelo, DeAngelo and Skinner (1992) and Conroy, Eades and Harris (2000);

- Additional tests give no support to the dividend signalling hypothesis but, instead, provide some support for the *window dressing* phenomenon and the maturity hypothesis [Grullon, Michaely and Swaminathan (2002)]. This evidence is stronger for the UK market.

Overall, we do not find support to the dividend signalling content hypothesis, which is consistent with some recent studies, such as those of DeAngelo, DeAngelo and Skinner (1996), Benartzi, Michaely and Thaler (1997), Abeyratna and Power (2002) and Benartzi *et al.* (2005). The fragile support we find in some tests is associated with the UK market that leads us to believe that in countries with concentrated ownership (such as France and Portugal), firms do not need to use dividends as a signal, which is in accordance with Goergen, Renneboog and Silva (2005) conclusions.

REFERENCES

Abeyratna, Gunasekarage and **Power**, David M., 2002, "The Post-announcement Performance of Dividend-changing Companies: The Dividend-signalling Hypothesis Revisited", *Accounting and Finance* 42, 131-151.

Aharony, Joseph and **Dotan**, Amihud, 1994, "Regular Dividend Announcements and Future Unexpected Earnings: An Empirical Analysis", *The Financial Review* 29 (1), 125-151.

Aharony, Joseph and **Swary**, Itzhak, 1980, "Quarterly Dividend and Earnings Announcements and Stockholders' Returns: An Empirical Analysis", *The Journal of Finance* 35 (1), 1-12.

Aivazian, Varouj, **Booth**, Laurence and **Cleary**, Sean, 2003a, "Dividend Policy and the Organization of Capital Markets", *Journal of Multinational Financial Management* 13 (2), 101-121.

Aivazian, Varouj, **Booth**, Laurence and **Cleary**, Sean, 2003b, "Do Emerging Market Firms Follow Different Dividend Policies from U.S. Firms?", *The Journal of Financial Research* 26 (3), 371-388.

Arnott, Robert D. and **Asness**, Cliford S., 2001, "Does Dividend Policy Foretell Earnings Growth?", Working Paper, SSRN Working Papers.

Arnott, Robert D. and **Asness**, Cliford S., 2003, "Surprise! Higher Dividends = Higher Earnings Growth", *Financial Analysts Journal*, 70-87.

Asquith, Paul and **Mullins**, David W., 1983, "The Impact of Initiating Dividend Payments on Shareholder Wealth", *The Journal of Business* 56 (1), 77-96.

Baker, H. Kent, **Mukherjee**, Tarun K. and **Paskelian**, Ohannes G., 2006, "How Norwegian Managers View Dividend Policy", *Global Finance Journal* 17 (1), 155-176.

Benartzi, Shlomo, **Grullon**, Gustavo, **Michaely**, Roni and **Thaler**, Richard, 2005, "Dividend Changes do not Signal Changes in Future Profitability*", The Journal of Business*, 78 (5), forthcoming.

Benartzi, Shlomo, **Michaely**, Roni and **Thaler**, Richard, 1997, "Do Changes in Dividends Signal the Future or the Past?", *The Journal of Finance* 52 (3), 1007-1034.

Benesh, Gary A., **Keown**, Arthur J. and **Pinkerton**, John M., 1984, "An Examination of Market Reaction to Substantial Shifts in Dividend Policy", *The Journal of Financial Research* 7 (2), 131-142.

Benzinho, José M., 2004, "The Dividend Policy of the Portuguese Corporations: Evidence from Euronext Lisbon", Working Paper, SSRN Working Papers.

Bhattacharya, Sudipto, 1979, "Imperfect Information, Dividend Policy, and 'The Bird in the Hand Fallacy'", *Bell Journal of Economics* 10 (1), 259-270.

Born, Jeffery A., **Moser**, James T. and **Officer**, Dennis T., 1988, "Changes in Dividend Policy and Subsequent Earnings", *Journal of Portfolio Management* 14 (4), 56-62.

Chen, Chung and **Wu**, Chunchi, 1999, "The Dynamics of Dividends, Earnings and Prices: Evidence and Implications for Dividend Smoothing and Signalling", *Journal of Empirical Finance* 6 (1), 29-58.

Chen, Gongmeng, **Firth,** Michael and **Gao,** Ning, 2002, "The Information Content of Concurrently Announced Earnings, Cash Dividends, and Stock Dividends: An Investigation of the Chinese Stock Market", *Journal of International Financial Management & Accounting* 13 (2), 101-124.

Conroy, Robert M., **Eades**, Kenneth M. and **Harris**, Robert S., 2000, "A Test of the Relative Pricing Effects of Dividends and Earnings: Evidence from Simultaneous Announcements in Japan", *The Journal of Finance* 55 (3), 1199-1227.

DeAngelo, Harry and **DeAngelo** Linda, 1990, "Dividend Policy and Financial Distress: An Empirical Investigation of Troubled NYSE Firms", *The Journal of Finance* 45 (5), 1415-1431.

DeAngelo, Harry, **DeAngelo** Linda and **Skinner**, Douglas J., 1992, "Dividends and Losses", *The Journal of Finance* 47 (5), 1837-1863.

DeAngelo, Harry, **DeAngelo**, Linda and **Skinner**, Douglas J., 1996, "Reversal of Fortune: Dividend Signaling and the Disappearance of Sustained Earnings Growth", *Journal of Financial Economics* 40 (3), 341-371.

Dewenter, Kathryn L. and **Warther**, Vincent A., 1998, "Dividends, Asymmetric Information, and Agency Conflicts: Evidence from a Comparison of the Dividend Policies of Japanese and U.S. Firms", *The Journal of Finance* 53 (3), 879-904.

Dhillon, Upinder S. and **Johnson**, Herb, 1994, "The Effect of Dividend Changes on Stock and Bond Prices", *The Journal of Finance* 49 (1), 281-289.

Dhillon, Upinder S., **Raman**, Kartik and **Ramírez**, Gabriel G., 2003, "Analyst's Dividend Forecasts and Dividend Signalling", Working Paper, SSRN Working Papers.

Fama, Eugene F. and **French,** Kenneth R., 2000, "Forecasting Profitability and Earnings", *Journal of Business* 73 (2), 161-175.

Goergen, Marc, **Renneboog**, Luc and **Silva**, Luis Correia, 2005, "When do German Firms Change their Dividends?", *Journal of Corporate Finance* 11 (2), 375-399.

Grullon, Gustavo, **Michaely**, Roni and **Swaminathan,** Bhaskaran, 2002, "Are Dividends Changes a Sign of Firm Maturity?", *The Journal of Business* 75 (3), 387-424.

Gurgul, Henryk, **Madjosz**, Pawel and **Mestel**, Roland, 2003, "GARCH Modelling of Austrian Stock Market Reactions on Dividend Announcements", Working Paper, VII Ogólnopolskie Seminarium Nauukowe.

Harada, Kimie and **Nguyen**, Pascal, 2005, "Dividend Changes Context and Signalling Efficiency in Japan", *Pacific-Basin Finance Journal* 13 (5), 504-522.

Hausman, Jerry A., 1978, "Specification Tests in Econometrics", *Econometrica* 46 (6), 1251-1271.

Healy, Joanne, **Hathorn**, John and **Kirch**, David, 1997, "Earnings and the Differential Information Content of Initial Dividend Announcements", *Accounting Enquiries* 6 (2), 187-220.

Jensen, Michael, 1986, "Agency Costs of Free Cash Flow, Corporate Finance, and Takeover", *American Economic Review* 76 (2), 323-329.

John, Kose and **Williams**, Joseph, 1985, "Dividends, Dilution, and Taxes: A Signalling Equilibrium", *The Journal of Finance* 40 (4), 1053-1070.

Lai, Gene C., **Song**, Zhiyi and **Fung**, Hung-Gay, 2004, "Is Signaling Hypothesis of Dividend Policy Dead?", Working Paper presented at 2004 FMA Annual Meeting.

Lang, Larry H.P. and **Litzenberger**, Robert H., 1989, "Dividend Announcements: Cash Flow Signalling Versus Free Cash Flow Hypothesis", *Journal of Financial Economics* 24 (1), 181-191.

Lasfer, Meziane M. and **Zenonos**, Maria, 2004, "The Market Valuation of Dividend Announcements in the UK, Germany, France and Italy", Working Paper presented at 2004 FMA Annual Meeting.

Lee, Hei Wai and **Ryan**, Patricia A., 2000, "The Information Content of Dividend Initiations and Omissions: The Free Cash Flow and Dividend Signaling Hypotheses", *The Journal of Research in Finance* 3 (2), 196-277.

Lee, Hei Wai and **Ryan**, Patricia A., 2002, "Dividends and Earnings Revisited: Cause or Effect?", *American Business Review* 20 (1), 117-122.

Lintner, John, 1956, "Distribution of Incomes of Corporations among Dividends, Retained Earnings and Taxes", *The American Economic Review* 46 (2), 97-113.

Lippert, Robert L., **Nixon**, Terry D. and **Pilotte**, Eugene A., 2000, "Incentive Compensation and the Stock Price Response to Dividend Increase Announcements", *The Financial Review* 35, (4) 69-94.

Lipson, Marc L., **Maquieira**, Carlos P. and **Megginson**, William, 1998, "Dividend Initiations and Earnings Surprises", *Financial Management* 27 (3), 36-45.

Lie, Erik, 2005, "Operating Performance Following Dividend Decreases and Omissions", *Journal of Corporate Finance* 12 (1), 27-53.

Lonie, A. A., **Abeyratna**, Gunasekarage, **Power**, David M. and **Sinclair**, C. D., 1996, "The Stock Market Reaction to Dividend Announcements: A UK Study of Complex Market Signals", *Journal of Economic Studies* 23 (1), 32-52.

Miller, Merton and **Modigliani**, Franco, 1961, "Dividend Policy, Growth, and the Valuation of Shares", *The Journal of Business* 34 (4), 411-433.

Miller, Merton H. and **Rock**, Kevin, 1985, "Dividend Policy Under Asymmetric Information", *The Journal of Finance* 40 (4), 1031-1051.

Mozes, Haim A. and **Rapaccioli**, Donna C., 1998, "The Link between Dividend Changes and Future Earnings", *The Journal of Financial Statement Analysis* 3 (3), 29-39.

Nissim, Doron, 2003, "Discussion - Reactions to Dividend Changes Conditional on Earnings Quality", *Journal of Accounting, Auditing & Finance* 18 (1), 153-161.

Nissim, Doron and **Ziv**, Amir, 2001, "Dividend Changes and Future Profitability", *The Journal of Finance* 56 (6), 2111-2133.

Omet, Ghassan, 2004, "Dividend Policy Behaviour in the Jordanian Capital Market", *International Journal of Business* 9 (3), 287-299.

Pettit, Richardson, 1972, "Dividend Announcements, Security Performance, and Capital Market Efficiency", *The Journal of Finance* 27 (5), 993-1007.

Pettit, Richardson R., 1976, "The Impact of Dividends and Earnings Announcements: A Reconciliation", *The Journal of Business* 49 (1), 86-96.

Reddy, Y. Subba and **Rath**, Subhrendu, 2005, "Disappearing Dividends in Emerging Markets?", *Emerging Markets, Finance & Trade*, 41 (6), pp. 58- 82.

Romon, Frédéric, 2000, "Contribution of Dividend Policy Stability to the Measurement of Dividend Announcement and Ex-dividend Effects on the French Market", Working Paper, Université de Valenciennes.

Sant, Rajiv and **Cowan**, Arnold R., 1994, "Do Dividends Signal Earnings? The Case of Omitted Dividends", *Journal of Banking and Finance* 18 (6), 1113-1133.

Stacescus, Bogdan, 2006, "Dividends Revisited: An In-depth Look at the Relationship Between Dividends and Earnings", Working Paper, University of Zurich.

Travlos, Nickolaos, **Trigeorgis**, Lenos and **Vafeas**, Nikos, 2001, "Share-holder Wealth Effects of Dividend Policy Changes in an Emerging Stock Market: The Case of Cyprus", *Multinational Finance Journal* 5 (2), 87-112.

Vieira, Elisabete F. S., 2005, "Signalling with Dividends? New Evidence from Europe", Instituto Superior de Ciências do Trabalho e da Empresa (ISCTE), *PhD Thesis*.

Vieira, Elisabete F. S. and **Raposo**, Clara C., 2007, "The Effect of Firm-specific Factors on the Market Reaction to Dividend Change Announcements: New Evidence from Europe", *Working Paper*, SSRN Working Papers.

Vivian, Andrew, 2006, "The Payout Ratio, Earnings Growth Returns: UK Industry Evidence", Working Paper, School of Economics, Finance and Business, University of Durham.

Watts, Ross, 1973, "The Information Content of Dividends", *The Journal of Business* 46 (2), 191-211.

White, Halbert, 1980, "A Heteroscedasticity-consistent Covariance Matrix Estimator and a Direct Test for Heteroscedasticity", *Econometrica* 48 (4), 149-170.

Yilmaz, Mustafa K. and **Gulay,** Guzhan, 2006, "Dividend Policies and Price-Volume Reactions to Cash Dividends on the Stock Market: Evidence from the Istanbul Stock Exchange", *Emerging Markets, Finance & Trade* 42 (4), 19-49.

Table 1 - Sample Selection

This table reports the number of dividend events for the Portuguese, the French and the UK samples, classified by sample selection criteria. 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 firm is listed on the respective stock exchange the year before and two years after the dividend events; 3) The firm's financial data is available on the *Datastream* or *Dhatis* (in the Portuguese sample) database at the year before and two years after the dividend events; 4) The firm paid an annual ordinary dividend in the current and previous year; 5) For the Portuguese and French samples, the dividend, earnings or other potentially contaminating announcements did not occur within 5 trading days of each other. For the UK firms we consider the same condition, except for earnings announcements. As they are simultaneous in almost the cases, we exclude dividend announcements which earnings announcements are announced on separate dates.

	Dividend Increases	No Change	Dividend Decreases	Total
Portuguese Sample				
Total number of dividend events	210	139	180	529
Dividend events with other dividend types declaration events	4	5	8	17
Dividend events with firms not listed in the stock exchange the year before and two years after the events	40	24	44	108
Dividend events which earnings or other potentially contaminating announcements occurs within 5 days of the dividend change announcement	4	3	6	13
Dividend events with missing data	4	6	1	11
Total excluded dividend events	52	38	59	149
Total number of dividend events for analysis	**158**	**101**	**121**	**380**
Events Percentage (%)	**41.58**	**26.58**	**31.84**	**100.00**
French Sample				
Total number of dividend events	539	317	200	1,056
Missing announcement dates on *Bloomberg*	240	243	116	599
Dividend events with other dividend types declaration events	2	1	0	3
Dividend events with firms not listed in the stock exchange the year before and two years after the events	12	5	5	22
Dividend events which earnings or other potentially contaminating announcements occurs within 5 days of the dividend change announcement	50	9	17	76
Dividend events with missing data	-	-	-	-
Total excluded dividend events	304	258	138	700
Total number of dividend events for analysis	**235**	**59**	**62**	**356**
Events Percentage (%)	**66.01**	**16.57**	**17.42**	**100.00**
UK Sample				
Total number of dividend events	2,838	380	341	3,559
Missing announcement dates on *Bloomberg*	124	26	62	212
Dividend events with other dividend types declaration events	20	2	4	26
Dividend events with firms not listed in the stock exchange the year before and two years after the events	1	1	1	3
Dividend events which potentially contaminating announcements (except earnings announcements) occurs within 5 days of the dividend change announcement	24	4	1	29
Dividend events which dividends and earnings information were announced on separate dates	4	2	0	6
Dividend events with missing data	3	2	0	5
Total excluded dividend events	176	37	68	281
Total number of dividend events for analysis	**2,662**	**343**	**273**	**3,278**
Events Percentage (%)	**81.21**	**10.46**	**8.33**	**100.00**

Table 2 - Summary Statistics

This table reports some descriptive statistics for dividend event observations during the sample period. DPS is the dividend per share. Dividend changes are the changes in DPS relative to the previous year, calculated both in monetary units and in percentage. Payout ratio is the DPS divided by the earnings before extraordinary items per share. Dividend yield is the DPS divided by the share price on the day before the dividend announcement. Debt ratio is the total debt divided by the total assets. Return on equity is the earnings before extraordinary items divided by the equity. Current ratio is the current asset divided by the current debt. All the accounting variables are considered at the end of the fiscal year before the dividend announcement.

Summary Statistics								
Portugal: 1989-2002								
	DPS, €	**Dividend Changes, €**	**Dividend Changes, (%)**	**Payout Ratio**	**Dividend Yield**	**Debt Ratio**	**Return on Equity**	**Current Ratio**
	All dividend events (N = 380)							
Mean	0.458	-0.031	2.055	0.641	0.132	0.389	0.089	1.989
Median	0.349	0.000	0.000	0.440	0.059	0.368	0.074	1.335
Stand. Dev.	0.624	0.771	46.153	1.251	0.288	0.213	0.086	3.055
	Dividend increases (N = 158)							
Mean	0.631	0.193	37.573	0.458	0.145	0.367	0.109	2.261
Median	0.449	0.100	20.000	0.318	0.073	0.343	0.091	1.410
Stand. Dev.	0.902	0.776	42.093	0.698	0.346	0.205	0.086	4.075
	No changes (N = 101)							
Mean	0.350	0.000	0.000	0.539	0.136	0.432	0.078	1.920
Median	0.324	0.000	0.000	0.414	0.050	0.426	0.057	1.328
Stand. Dev.	0.208	0.000	0.000	0.693	0.238	0.216	0.079	2.338
	Dividend decreases (N = 121)							
Mean	0.322	-0.350	-42.197	0.965	0.111	0.382	0.071	1.691
Median	0.249	-0.175	-41.176	0.882	0.051	0.374	0.054	1.257
Stand. Dev.	0.246	0.959	23.613	1.936	0.240	0.218	0.087	1.734
France: 1995-2002								
	DPS, €	**Dividend Changes, €**	**Dividend Changes, (%)**	**Payout Ratio**	**Dividend Yield**	**Debt Ratio**	**Return on Equity**	**Current Ratio**
	All dividend events (N = 356)							
Mean	1.243	0.102	13.046	0.296	0.020	0.247	0.051	1.365
Median	0.860	0.055	9.222	0.180	0.018	0.248	0.045	1.177
Stand. Dev.	1.267	0.498	32.848	2.672	0.016	0.136	0.040	0.541
	Dividend increases (N = 235)							
Mean	1.319	0.250	26.367	0.371	0.021	0.246	0.052	1.392
Median	0.910	0.130	15.797	0.166	0.018	0.246	0.046	1.205
Stand. Dev.	1.336	0.417	30.497	3.244	0.018	0.133	0.038	0.537
	No changes (N = 59)							
Mean	1.148	0.000	0.000	0.202	0.020	0.237	0.054	1.301
Median	0.830	0.000	0.000	0.200	0.018	0.214	0.049	1.190
Stand. Dev.	0.995	0.000	0.000	0.335	0.013	0.142	0.039	0.504
	Dividend decreases (N = 62)							
Mean	1.042	-0.362	-23.742	0.098	0.019	0.265	0.042	1.324
Median	0.640	-0.150	-18.7686	0.224	0.016	0.276	0.037	1.097
Stand. Dev.	1.218	0.680	22.163	1.007	0.012	0.140	0.046	0.589

(Continue)

Table 2 - Summary Statistics (continued)

Summary Statistics UK: 1995-2002	DPS, £	Dividend Changes, £	Dividend Changes, (%)	Payout Ratio	Dividend Yield	Debt Ratio	Return on Equity	Current Ratio
	All dividend events (N = 3278)							
Mean	8.474	0.661	13.906	0.509	0.035	0.207	0.131	1.478
Median	6.355	0.500	9.655	0.429	0.030	0.186	0.133	1.302
Stand. Dev.	7.930	2.061	32.355	0.812	0.024	0.164	0.201	0.922
	Dividend increases (N = 2662)							
Mean	8.757	1.047	19.941	0.453	0.032	0.208	0.145	1.446
Median	6.550	0.650	11.355	0.415	0.028	0.186	0.141	1.290
Stand. Dev.	8.189	1.780	31.606	0.273	0.021	0.165	0.191	0.822
	No change (N = 343)							
Mean	7.432	0.000	0.000	0.902	0.048	0.182	0.061	1.702
Median	6.000	0.000	0.000	0.630	0.044	0.169	0.074	1.339
Stand. Dev.	6.113	0.000	0.000	2.381	0.029	0.147	0.207	1.532
	Dividend decreases (N = 273)							
Mean	7.103	-2.272	-27.160	0.621	0.044	0.229	0.042	1.489
Median	5.165	-1.070	-20.471	0.483	0.036	0.213	0.072	1.363
Stand. Dev.	7.282	3.088	23.434	0.627	0.034	0.178	0.230	0.713

Table 3 - Lintner Model Estimations

This table reports the regression of current earnings per share and the previous dividend per share on current dividend per share. $D_{i,t}$ is the dividend per share i announced in year t; $D_{i,t-1}$ is the dividend per share i announced in year t-1 and $EPS_{i,t}$ is the earnings per share i in year t. The table presents the results obtained with the most appropriate model: the pooled OLS, FEM or REM. The numbers in parentheses are the t-statistics corrected for heteroscedasticity using the White (1980) method. 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.

$$D_{i,t} = \alpha_i + \beta_1 \text{ EPS}_{i,t} + \beta_2 \text{ D}_{i,t-1} + \varepsilon_{i,t}$$

Coefficient	Portugal		France		UK	
	Pooled OLS		FEM		FEM	
Constant	0.289	*				
	(4.216)					
Earnings	0.079	*	0.046		0.012	
	(2.674)		(1.816)		(1.277)	
Lagged Dividends	0.197		0.060		0.800	*
	(1.224)		(0.535)		(11.217)	
N	383		978		3,348	
Adjusted R^2	0.093		0.799		0.944	
Test F	1.14		9.57	*	1.85	*
Hausman Test	59.66	*	283.64	*	334.59	*

* Significantly different from zero at the 1% level

Table 4 - Abnormal returns for the announcement period

This table reports the abnormal returns for the announcement period and for different event periods. Market-adjusted buy-and-hold returns (Panel A) for the dividend events of the three samples are calculated for the different event periods as follows:

$$BHAR_{i(a\ to\ b)} = \prod_{t=a}^{b}(1+R_{i,t}) - \prod_{t=a}^{b}(1+R_{m,t})$$

where $BHAR_{i\ (a\ to\ b)}$ is the abnormal return for share i from time a to b; $R_{i,t}$ is the return for share i in day t and $R_{m,}$ is the market return for day t. The market return is based on the PSI-Geral Index for Portugal, CAC-40 Index for France and FTSE-100 Index for the UK. *t*-Statistics are calculated based on the cross-sectional variance in the mean abnormal return and are reported in parentheses. In Panel B we have the cross-sectional distribution of 3 day abnormal returns for dividend change announcements, based on the BHAR results.

Panel A: BHAR mean for different periods						
	Sample Size	Mean Days -5 to -2	Mean Days -2 to +2	Mean **Days -1 to +1**	Mean Days-5 to +5	Mean Days +2 to +5
Portugal						
Increases	N = 158	0.0042	0.0055	0.0034	0.0136**	0.0056***
		(1.233)	(1.361)	(1.172)	(2.389)	(1.804)
Non-Changes	N = 101	0.0077**	-0.0009	-0.0022	0.0101***	0.0045
		(2.148)	(-0.219)	(-0.638)	(1.790)	(1.277)
Decreases	N = 121	0.0000	-0.0108*	-0.0056***	-0.0074	-0.0019
		(-0.014)	(-2.648)	(-1.755)	(-1.376)	(-0.555)
France						
	Sample Size	Mean Days -5 to -2	Mean Days -2 to +2	Mean **Days -1 to +1**	Mean Days-5 to +5	Mean Days +2 to +5
Increases	N = 235	-0.0043	0.0010	0.0019	0.0032	0.0060**
		(-1.465)	(0.301)	(0.737)	(0.774)	(2.175)
Non-Changes	N = 59	0.0077	0.0094***	0.0051	0.0164***	0.0032
		(1.146)	(1.843)	(0.971)	(1.716)	(0.598)
Decreases	N = 62	0.0070	-0.0052	-0.0025	-0.0026	-0.0080***
		(1.300)	(-0.704)	(-0.400)	(-0.209)	(-1.818)
UK						
	Sample Size	Mean Days -5 to -2	Mean Days -2 to +2	Mean **Days -1 to +1**	Mean Days-5 to +5	Mean Days +2 to +5
DIEI	N=1,931	0.0053*	0.0211*	0.0174*	0.0279*	0.0045*
		(5.271)	(11.684)	(10.704)	(12.534)	(4.273)
DIED	N = 731	0.0043**	0.0237*	0.0192*	0.0289*	0.0056*
		(2.450)	(7.603)	(6.544)	(7.746)	(2.917)
DNCEI	N = 141	0.0024	0.0336*	0.0288*	0.0436*	0.0112***
		(0.650)	(4.422)	(4.551)	(4.374)	(1.921)
DNCED	N= 202	0.0047	0.0266*	0.0220*	0.0312*	0.0044
		(1.401)	(4.309)	(3.846)	(4.123)	(1.210)
DDEI	N= 108	0.0009	0.0173**	0.0195**	0.0189***	-0.0013
		(0.185)	(2.157)	(2.567)	(1.896)	(-0.260)
DDED	N= 165	0.0150*	0.0241*	0.0187*	0.0403*	0.0052
		(3.508)	(3.437)	(2.901)	(4.167)	(1.085)

(Continue)

* 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 4 - Abnormal returns for the announcement period (continued)

Panel B - Cross-sectional distribution of 3 day abnormal returns for dividend change announcements										
Portugal										
	Dividend Increases			**Dividend Non-Changes**				**Dividend Decreases**		
Size of 3-day Abnormal Return (AR)	**Nº of Events**	**% of Events**	**Cum. % of Events**	**Nº of Events**	**% of Events**	**Cum. % of Events**	**Size of 3-day Abnormal Return (AR)**	**Nº of Events**	**% of Events**	**Cum. % of Events**
	N=158			**N=101**				**N=121**		
AR < -0.12	0	0.00	0.00	0	0.00	0.00	0.12 < AR	1	0.83	0.83
-0.12 ≤ AR < -0.06	3	1.90	1.90	7	6.93	6.93	0.06 < AR ≤ 0.12	5	4.13	4.96
-0.06 ≤ AR < -0.04	5	3.16	5.06	4	3.96	10.89	0.04 < AR ≤ 0.06	1	0.83	5.79
-0.04 ≤ AR < -0.02	19	12.03	17.09	7	6.93	17.82	0.02 < AR ≤ 0.04	15	12.40	18.18
-0.02 ≤ AR < 0.00	45	28.48	45.57	32	31.68	49.50	0.00 < AR ≤ 0.02	26	21.49	39.67
0.00 ≤ AR < 0.02	52	32.91	78.48	31	30.69	80.20	-0.02 < AR ≤ 0.00	44	36.36	76.03
0.02 ≤ AR < 0.04	20	12.66	91.14	12	11.88	92.08	-0.04 < AR ≤ -0.02	9	7.44	83.47
0.04 ≤ AR < 0.06	7	4.43	95.57	3	2.97	95.05	-0.06 < AR ≤ -0.04	12	9.92	93.39
0.06 ≤ AR < 0.12	5	3.16	98.73	5	4.95	100.00	-0.12 < AR ≤ -0.06	8	6.61	100.00
0.12 ≤ AR	2	1.27	100.00	0	0.00	100.00	AR ≤ -0.12	0	0.00	100.00
	158	100.00		101	100.00			121	100.00	
France										
	Dividend Increases			**Dividend Non-Changes**				**Dividend Decreases**		
Size of 3-day Abnormal Return (AR)	**Nº of Events**	**% of Events**	**Cum. % of Events**	**Nº of Events**	**% of Events**	**Cum. % of Events**	**Size of 3-day Abnormal Return (AR)**	**Nº of Events**	**% of Events**	**Cum. % of Events**
	N=235			**N=59**				**N=62**		
AR < -0.12	2	0.85	0.85	0	0.00	0.00	0.12 < AR	1	1.61	1.61
-0.12 ≤ AR < -0.06	9	3.83	4.68	4	6.78	6.78	0.06 < AR ≤ 0.12	2	3.23	4.84
-0.06 ≤ AR < -0.04	13	5.53	10.21	4	6.78	13.56	0.04 < AR ≤ 0.06	7	11.29	16.13
-0.04 ≤ AR < -0.02	35	14.89	25.11	6	10.17	23.73	0.02 < AR ≤ 0.04	7	11.29	27.42
-0.02 ≤ AR < 0.00	49	20.85	45.96	11	18.64	42.37	0.00 < AR ≤ 0.02	16	25.81	53.23
0.00 ≤ AR < 0.02	60	25.53	71.49	13	22.03	64.41	-0.02 < AR ≤ 0.00	9	14.52	67.74
0.02 ≤ AR < 0.04	42	17.87	89.36	8	13.56	77.97	-0.04 < AR ≤ -0.02	10	16.13	83.87
0.04 ≤ AR < 0.06	9	3.83	93.19	10	16.95	94.92	-0.06 < AR ≤ -0.04	5	8.06	91.94
0.06 ≤ AR < 0.12	15	6.38	99.57	3	5.08	100.00	-0.12 < AR ≤ -0.06	4	6.45	98.39
0.12 ≤ AR	1	0.43	100.00	0	0.00	100.00	AR ≤ -0.12	1	1.61	100.00
	235	100.00		59	100.00			62	100.00	

(Continue)

Table 4 - Abnormal returns for the announcement period (continued)

Panel B - Cross-sectional distribution of 3 day abnormal returns for dividend change announcements

UK																			
	DIEI			**DIED**			**DNCEI**			**DNCED**				**DDEI**			**DDED**		
Size of 3-day Abnormal Return (AR)	**Nº Events N=1,931**	**% of Events**	**Cum. % of Events**	**Nº Events N=731**	**% of Events**	**Cum. % of Events**	**Nº Events N=141**	**% of Events**	**Cum. % Of Events**	**Nº Events N=202**	**% of Events**	**Cum. % of Events**	**Size of 3-day Abnormal Return (AR)**	**Nº Events N=108**	**% of Events**	**Cum. % of Events**	**Nº Events N=165**	% of Events	Cum. % of Events
AR < -0.12	52	2.69	2.69	28	3.83	3.83	1	0.71	0.71	8	3.96	3.96	0.12 < AR	12	11.11	11.11	15	9.09	9.09
-0.12 ≤ AR < -0.06	117	6.06	8.75	51	6.98	10.81	10	7.09	7.80	11	5.45	9.41	0.06 < AR ≤ 0.12	14	12.96	24.07	26	15.76	24.85
-0.06 ≤ AR < -0.04	104	5.39	14.14	41	5.61	16.42	9	6.38	14.18	12	5.94	15.35	0.04 < AR ≤0.06	12	11.11	35.19	14	8.48	33.33
-0.04 ≤ AR < -0.02	195	10.10	24.24	61	8.34	24.76	20	14.18	28.37	18	8.91	24.26	0.02 < AR ≤ 0.04	12	11.11	46.30	24	14.55	47.88
-0.02 ≤ AR < 0.00	262	13.57	37.80	102	13.95	38.71	11	7.80	36.17	30	14.85	39.11	0.00 < AR ≤0.02	12	11.11	57.41	19	11.52	59.39
0.00 ≤ AR < 0.02	321	16.62	54.43	102	13.95	52.67	25	17.73	53.90	29	14.36	53.47	-0.02 < AR ≤ 0.00	16	14.81	72.22	19	11.52	70.91
0.02 ≤ AR < 0.04	264	13.67	68.10	87	11.90	64.57	14	9.93	63.83	15	7.43	60.89	-0.04 < AR ≤ -0.02	11	10.19	82.41	17	10.30	81.21
0.04 ≤ AR < 0.06	193	9.99	78.09	80	10.94	75.51	12	8.51	72.34	27	13.37	74.26	-0.06 < AR ≤ -0.04	5	4.63	87.04	8	4.85	86.06
0.06 ≤ AR < 0.12	301	15.59	93.68	123	16.83	92.34	23	16.31	88.65	31	15.35	89.60	-0.12 < AR ≤ -0.06	12	11.11	98.15	16	9.70	95.76
0.12 ≤ AR	122	6.32	100.00	56	7.66	100.00	16	11.35	100.00	21	10.40	100.00	AR ≤ -0.12	2	1.85	100.00	7	4.24	100.00
	1,931	100.00		731	100.00		141	100.00		202	100.00			108	100.00		165	100.00	

Table 5 - Regression of market reaction on dividend changes

This table reports the regression of dividend changes on market's reaction. $BHAR_3$ is the buy and hold accumulated abnormal return on the 3-day period as calculated by equation [5]; $\Delta D_{i,t,}$ 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; DIEI is a dummy variable that takes value 1 if both dividend and earnings increase and zero otherwise; DIED is a dummy variable that takes value 1 if dividend increases and earnings decrease and zero otherwise; DDEI is a dummy variable that takes value 1 if dividend decreases and earnings increases and zero otherwise; DDED is a dummy variable that takes value 1 if both dividend and earnings decrease and zero otherwise. The table presents the results estimated using pooled OLS, FEM and REM. The numbers in parentheses are the t-statistics corrected for heteroscedasticity using the White (1980) method. 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.

$$BHAR3_i = \alpha + \beta_1 \text{ DI x } \Delta D_{i,0} + \beta_2 \text{ DD x } \Delta D_{i,0} + \varepsilon_{i,t}$$

Portugal

Coefficient	Pooled OLS	FEM	REM
Constant	**-0.001**		-0.001
	(-0.414)		(-0.217)
DI	**0.011***	0.014*	0.013
	(9.457)	(6.381)	(1.522)
DD	**0.007**	0.003	0.004
	(1.252)	(0.633)	(0.334)
N	380	380	380
Adjusted R^2	0.001	0.011	0.224
Test F	1.05		
Hausman Test		0.76	

France

Coefficient	Pooled OLS	FEM	REM
Constant	**0.002**		0.003
	(0.966)		(0.915)
DI	**-0.103**	-0.950*	-0.349
	(-0.437)	(-3.641)	(-1.287)
DD	**0.109**	0.668*	0.259
	(0.855)	(3.637)	(1.428)
N	356	356	356
Adjusted R^2	0.001	0.026	0.237
Test F	1.12		
Hausman Test		7.10**	

UK

$$BHAR3_i = \alpha + \beta_1 \text{ DIEI x } \Delta D_{i,0} + \beta_2 \text{ DIED x } \Delta D_{i,0} + \beta_3 \text{ DDEI x } \Delta D_{i,0} + \beta_4 \text{ DDED x } \Delta D_{i,0} + \varepsilon_{i,t}$$

Coefficient	Pooled OLS	FEM	REM
Constant	0.019*		**0.020***
	(11.900)		**(9.055)**
DIEI	0.026	-0.541	**-0.276**
	(0.070)	(-1.528)	**(-0.855)**
DIED	-0.322	-0.863***	**-0.611**
	(-0.732)	(-1.960)	**(-1.542)**
DDEI	-0.223	-0.158	**-0.195**
	(-1.110)	(-0.645)	**(-0.698)**
DDED	0.006	-0.004	**-0.006**
	(0.034)	(-0.026)	**(-0.039)**
N	3,278	3,278	3,278
Adjusted R^2	0.000	0.039	0.163
Test F	1.26*		
Hausman Test		7.27	

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

Table 6 - Regression of earnings changes on dividend changes using Fama and French Approach

This table reports the estimation of a regression relating earnings changes to dividend changes using the Fama and French (2000) approach to predict expected earnings. E_τ denotes earnings before extraordinary items in year τ (year 0 is the event year). BV_{-1} is the book value of equity at the end of year -1; ΔD_t is the annual change in the cash dividend payment, scaled by the share price in the announcement day; ROE_τ is equal to the earnings before extraordinary items in year τ scaled by the book value of equity at the end of year τ; DFE_0 is equal to $ROE_0 - E[ROE_0]$, where $E[ROE_0]$ is the fitted value from the cross-sectional regression of ROE_0 on the log of total assets in year -1, the market-to-book ratio of equity in year -1, and ROE_{-1}; CE_0 is equal to $(E_0 - E_{-1})/BV_{-1}$. $NDFED_0$ is a dummy variable that takes value 1 if DFE_0 is negative and 0 otherwise; $PDFED_0$ is a dummy variable that takes value 1 if DFE_0 is positive and 0 otherwise; $NCED_0$ is a dummy variable that takes value 1 if CE_0 is negative and 0 otherwise; $PCED_0$ is a dummy variable that takes value 1 if CE_0 is positive and 0 otherwise; DI (DD) is a dummy variable that takes the value 1 for dividend increases (decreases) and 0 otherwise. The regressions were estimated using the pooled OLS, FEM or REM. The numbers in parentheses are the t-statistics corrected for heteroscedasticity using the White (1980) method. 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.

$$(E_{i,\tau} - E_{i,\tau-1})/BV_{i,-1} = \alpha + \beta_1 \text{ DI } \Delta \text{D}_{i,0} + \beta_2 \text{ DD } \Delta \text{D}_{i,0} + \begin{pmatrix} \gamma_1 + \gamma_2 NDFED_0 + \gamma_3 NDFED_0 * DFE_{i,0} + \\ \gamma_4 PDFED_0 * DFE_{i,0} \end{pmatrix} * \text{DFE}_{i,0}$$
$$+ \left(\lambda_1 + \lambda_2 NCED_0 + \lambda_3 NCED_0 * CE_{i,0} + \lambda_4 PCED_0 * CE_{i,0}\right) * \text{CE}_{i0} + \varepsilon_{i,t}$$

Portugal

Coefficient	Pooled OLS	FEM	REM
		$\tau = 1$	
Constant	**0.009**		0.011
	(1.129)		(0.832)
DI x $\Delta D_{i,0}$	**0.008**	0.018	0.010
	(0.940)	(1.617)	(0.356)
DD x $\Delta D_{i,0}$	**-0.002**	0.056	0.027
	(-0.062)	(1.416)	(0.386)
N	364	364	364
Adjusted R^2	0.596	0.613	0.679
Test F	1.19		
Hausman Test		69.97 *	
		$\tau = 2$	
Constant	**-0.005**		-0.005
	(-0.539)		(-0.306)
DI x $\Delta D_{i,0}$	**0.151** *	0.050	0.106
	(3.402)	(0.574)	(0.762)
DD x $\Delta D_{i,0}$	**-0.055**	-0.006	-0.027
	(-0.817)	(-0.083)	(-0.264)
N	347	347	347
Adjusted R^2	0.108	0.052	0.256
Test F	0.76		
Hausman Test		23.24 *	

* Significantly different from zero at the 1% level (Continue)

Table 6 - Regression of earnings changes on dividend changes using Fama and French Approach (continued)

$$(E_{i,\tau} - E_{i,\tau-1})/BV_{i,-1} = \alpha + \beta_1 \text{ DI } \Delta \text{ D}_{i,0} + \beta_2 \text{ DD } \Delta \text{ D}_{i,0} + \begin{pmatrix} \gamma_1 + \gamma_2 NDFED_0 + \gamma_3 NDFED_0 * DFE_{i,0} + \\ \gamma_4 PDFED_0 * DFE_{i,0} \end{pmatrix} * \text{ DFE}_{i,0}$$
$$+ \left(\lambda_1 + \lambda_2 NCED_0 + \lambda_3 NCED_0 * CE_{i,0} + \lambda_4 PCED_0 * CE_{i,0}\right) * \text{ CE}_{i0} + \varepsilon_{i,t}$$

France

Coefficient	Pooled OLS	FEM	REM
		τ = 1	
Constant	0.002		0.003
	(0.527)		(0.411)
DI x $\Delta D_{i,0}$	0.180	**0.053**	0.078
	(0.670)	**(0.206)**	(0.196)
DD x $\Delta D_{i,0}$	-0.069	**-0.098**	-0.117
	(-1.716)	**(-0.774)**	(-0.465)
N	310	310	310
Adjusted R^2	0.166	0.456	0.610
Test F	2.75 *		
Hausman Test		32.38 *	
		τ = 2	
Constant	**-0.002**		0.002
	(-0.260)		(0.213)
DI x $\Delta D_{i,0}$	**0.771**	0.306	0.452
	(1.213)	(0.736)	(0.793)
DD x $\Delta D_{i,0}$	**-0.084**	-0.141	-0.148
	(-0.520)	(-0.960)	(-0.337)
N	236	236	236
Adjusted R^2	0.058	0.077	0.413
Test F	1.05		
Hausman Test		7.45	

UK

Coefficient	Pooled OLS	FEM	REM
		τ = 1	
Constant	-0.013		-0.023 ***
	(-1.271)		(-1.857)
DIEI x $\Delta D_{i,0}$	-1.339	**-0.856**	-1.089
	(-1.141)	**(-0.633)**	(-0.671)
DIED x $\Delta D_{i,0}$	-1.096	**0.144**	-0.585
	(-0.529)	**(0.075)**	(-0.295)
DDEI x $\Delta D_{i,0}$	-7.169 **	**-8.048** **	-7.417 *
	(-2.473)	**(-2.532)**	(-5.020)
DDED x $\Delta D_{i,0}$	-1.671 ***	**-2.131** **	-1.905 **
	(-1.945)	**(-2.491)**	(-2.101)
N	2,811	2,811	2,811
Adjusted R^2	0.071	0.077	0.149
Test F	28.11 *		
Hausman Test		132.37 *	
		τ = 2	
Constant	-0.003		**-0.005**
	(-0.221)		**(-0.294)**
DIEI x $\Delta D_{i,0}$	2.293	1.959	**2.146**
	(1.355)	(1.076)	**(0.984)**
DIED x $\Delta D_{i,0}$	-0.142	-0.363	**-0.234**
	(-0.062)	(-0.168)	**(-0.086)**
DDEI x $\Delta D_{i,0}$	1.356	0.005	**0.876**
	(0.297)	(0.002)	**(0.401)**
DDED x $\Delta D_{i,0}$	-0.332	-0.661	**-0.443**
	(-0.539)	(-0.899)	**(-0.385)**
N	2,360	2,360	2,360
Adjusted R^2	0.011	0.004	0.124

* 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 7 - Regression of profitability measures changes on dividend changes

This table reports estimates of regressions relating some profitability measures to dividend changes. ROE_τ is equal to the earnings before extraordinary items in year τ scaled by the book value of equity at the end of year τ (Panel A); $ROA_{i,\tau}$ is equal to the operating income before depreciation in year τ scaled by book value of assets at the end of year τ (Panel B); $D/E_{i,\tau}$ is the debt to equity ratio calculated as the book value of total debt in year τ divided by the total book value at the end of year τ (Panel C); $WCR_{i,\tau}$ is the working capital ratio, computed as total current assets in year τ divided by total current liabilities at the end of year τ (Panel D); $CF_{i,\tau}$ is the cash flow, computed as operating income before depreciation less interest expense, income taxes and preferred stock dividends scaled by the total assets at the end of year τ (Panel E); $\Delta D_{i,t}$ is the annual change in the cash dividend payment, scaled by the share price in the announcement day; DI is a dummy variable that takes the value 1 if dividend increases and 0 otherwise; DD is a dummy variable that takes the value 1 if dividend decreases and 0 otherwise; DIEI is a dummy variable that takes value 1 if both dividend and earnings increase and zero otherwise; DIED is a dummy variable that takes value 1 if dividend increases and earnings decrease and zero otherwise; DDEI is a dummy variable that takes value 1 if dividend decreases and earnings increases and zero otherwise; DDED is a dummy variable that takes value 1 if both dividend and earnings decrease and zero otherwise. The table presents the results obtained with the most appropriate model: the pooled OLS, FEM or REM. The numbers in parentheses are the t-statistics corrected for heteroscedasticity using the White (1980) method. 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.

Panel A:

$$ROA_{i,\tau} - ROA_{i,\tau-1} = \alpha + \beta_1 \, DI \times \Delta D_{i,0} + \beta_2 \, DD \times \Delta D_{i,0} + \beta_3 \, ROA_{i,\tau-1} + \beta_4 \, (ROA_{i,0} - ROA_{i,-1}) + \varepsilon_{i,t}$$

Coefficient	FEM τ = 1		FEM τ = 2	
Portugal				
Constant				
DI x $\Delta D_{i,0}$	**-0.015**	*	**-0.014**	
	(-2.656)		**(-0.436)**	
DD x $\Delta D_{i,0}$	**-0.013**		**-0.032**	
	(-0.801)		**(-1.297)**	
$ROA_{i,\tau-1}$	**-0.651**	*	**-0.597**	*
	(-8.096)		**(-8.525)**	
$ROA_{i,0}$-$ROA_{i,-1}$	**0.132**	***	**-0.007**	
	(1.764)		**(-0.113)**	
N	364		347	
Adjusted R^2	0.323		0.246	
Test F	2.02	*		
Hausman Test	33.73	*	60.10	*
France				
Constant				
DI x $\Delta D_{i,0}$	**-0.036**		**0.098**	
	(-0.218)		**(0.982)**	
DD x $\Delta D_{i,0}$	**-0.133**		**-0.239**	***
	(-0.875)		**(-1.918)**	
$ROA_{i,\tau-1}$	**-0.934**	*	**-1.046**	*
	(-5.435)		**(-6.671)**	
$ROA_{i,0}$-$ROA_{i,-1}$	**0.223**	*	**0.030**	
	(2.973)		**(0.419)**	
N	310		235	
Adjusted R^2	0.274		0.541	
Test F	1.66	*		
Hausman Test	32.72	*	77.55	*

(Continue)

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

Table 7 - Regression of profitability measures changes on dividend changes

(continued)

Panel A:

$$ROA_{i,\tau} - ROA_{i,\tau-1} = \alpha + \beta_1 \, DI \times \Delta D_{i,0} + \beta_2 \, DD \times \Delta D_{i,0} + \beta_3 \, ROA_{i,\tau-1} + \beta_4 \, (ROA_{i,0} - ROA_{i,-1}) + \varepsilon_{i,t}$$

UK				
Coefficient	**FEM**			
	τ = 1		**τ = 2**	
Constant				
DIEI x $\Delta D_{i,0}$	**-0.392**		**-0.096**	
	(-1.255)		**(-0.214)**	
DIED x $\Delta D_{i,0}$	**-1.334**	*	**-0.694**	
	(-2.643)		**(-1.607)**	
DDEI x $\Delta D_{i,0}$	**-0.203**		**0.866**	
	(-1.027)		**(1.153)**	
DDED x $\Delta D_{i,0}$	**-0.149**		**0.165**	
	(-0.745)		**(0.783)**	
$ROA_{i,\tau-1}$	**-0.741**	*	**-0.813**	*
	(-13.905)		**(-14.984)**	
$ROA_{i,0}$-$ROA_{i,-1}$	**-0.001**		**0.052**	
	(-0.022)		**(1.454)**	
N	2,809		2,360	
Adjusted R^2	0.314		0.365	
Test F	1.86	*	1.91	*
Hausman Test	258.39	*	117.45	*

Panel B:

$$ROE_{i,\tau} - ROE_{i,\tau-1} = \alpha + \beta_1 \, DI \times \Delta D_{i,0} + \beta_2 \, DD \times \Delta D_{i,0} + \beta_3 \, ROE_{i,\tau-1} + \beta_4 \, (ROE_{i,0} - ROE_{i,-1}) + \varepsilon_{i,t}$$

Portugal				
Coefficient	**REM**		**FEM**	
	τ = 1		**τ = 2**	
Constant	**-0.565**	***		
	(-1.808)			
DI x $\Delta D_{i,0}$	**-0.046**		**0.072**	
	(-0.111)		**(1.000)**	
DD x $\Delta D_{i,0}$	**-0.283**		**0.027**	
	(-0.271)		**(0.743)**	
$ROE_{i,\tau-1}$	**-1.398**		**-0.816**	*
	(-1.567)		**(-5.481)**	
$ROE_{i,0}$-$ROE_{i,-1}$	**1.354**		**0.033**	
	(0.719)		**(0.195)**	
N	364		347	
Adjusted R^2	0.343		0.283	
Test F	1.78	*	1.77	*
Hausman Test	6.14		123.77	*

(Continue)

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

Table 7 - Regression of profitability measures changes on dividend changes

(continued)

Panel B: $ROE_{i,\tau}$ - $ROE_{i,\tau-1} = \alpha + \beta_1$ DI x $\Delta D_{i,0} + \beta_2$ DD x $\Delta D_{i,0} + \beta_3$ $ROE_{i,\tau-1} + \beta_4$ ($ROE_{i,0}$ - $ROE_{i,-1}$) $+ \varepsilon_{i,t}$				
France				
Coefficient	**FEM**			
	τ = 1		**τ = 2**	
Constant				
DI x $\Delta D_{i,0}$	**-0.153**		**0.051**	
	(-0.543)		**(0.248)**	
DD x $\Delta D_{i,0}$	**-0.245**		**-0.022**	
	(-0.903)		**(-0.151)**	
$ROE_{i,\tau-1}$	**-0.820**	**	**-1.353**	*
	(-2.121)		**(-5.887)**	
$ROE_{i,0}$-$ROE_{i,-1}$	**-0.001**		**-0.099**	
	(-0.003)		**(-0.697)**	
N	310		235	
Adjusted R^2	0.260		0.620	
Test F	2.07	*	4.38	*
Hausman Test	45.3	*	59.14	*

Panel B: $ROE_{i,\tau}$ - $ROE_{i,\tau-1} = \alpha + \beta_1$ DI x $\Delta D_{i,0} + \beta_2$ DD x $\Delta D_{i,0} + \beta_3$ $ROE_{i,\tau-1} + \beta_4$ ($ROE_{i,0}$ - $ROE_{i,-1}$) $+ \varepsilon_{i,t}$				
UK				
Coefficient	**FEM**			
	τ = 1		**τ = 2**	
Constant				
DIEI x $\Delta D_{i,0}$	**-2.666**	**	**-0.454**	
	(-2.559)		**(-0.472)**	
DIED x $\Delta D_{i,0}$	**-2.471**	**	**-4.803**	**
	(-2.267)		**(-2.573)**	
DDEI x $\Delta D_{i,0}$	**2.836**		**1.758**	
	(1.495)		**(0.934)**	
DDED x $\Delta D_{i,0}$	**0.242**		**-0.026**	
	(0.350)		**(-0.033)**	
$ROE_{i,\tau-1}$	**-0.975**	*	**-0.881**	*
	(-16.401)		**(-18.282)**	
$ROE_{i,0}$-$ROE_{i,-1}$	**0.115**	*	**-0.007**	
	(2.766)		**(-0.219)**	
N	2,817		2,366	
Adjusted R^2	0.378		0.428	
Test F	2.01	*	2.70	*
Hausman Test	85.12	*	96.18	*

(Continue)

* Significantly different from zero at the 1% level

** Significantly different from zero at the 5% level

Table 7 - Regression of profitability measures changes on dividend changes

(continued)

Panel C: $D/E_{i,\tau} - D/E_{i,\tau-1} = \alpha + \beta_1 \text{DI} \times \Delta D_{i,0} + \beta_2 \text{DD} \times \Delta D_{i,0} + \beta_3 D/E_{i,\tau-1} + \beta_4 (D/E_{i,0} - D/E_{i,-1}) + \varepsilon_{i,t}$

Portugal

Coefficient	FEM			
	τ = 1		τ = 2	
Constant				
DI x $\Delta D_{i,0}$	**0.066**		**0.306**	
	(1.143)		**(0.508)**	
DD x $\Delta D_{i,0}$	**0.219**		**0.581**	
	(0.700)		**(1.549)**	
ROE $_{i,\tau-1}$	**-0.654**	*	**-0.841**	*
	(-3.194)		**(-6.481)**	
ROE $_{i,0}$-ROE $_{i,-1}$	**0.022**		**-0.078**	
	(0.164)		**(-1.006)**	
N	364		347	
Adjusted R^2	0.230		0.397	
Test F	1.26	***	2.6	*
Hausman Test	63.63	*	29.75	*

France

Coefficient	FEM		Pooled OLS	
	τ = 1		τ = 2	
Constant			**3.955**	**
			(2.294)	
DI x $\Delta D_{i,0}$	**-4.974**		**2.786**	
	(-1.212)		**(0.107)**	
DD x $\Delta D_{i,0}$	**7.437**	**	**-7.275**	
	(2.306)		**(-1.056)**	
D/E $_{i,\tau-1}$	**0.016**		**-3.900**	**
	(0.043)		**(-2.200)**	
D/E $_{i,0}$-D/E $_{i,-1}$	**-0.441**		**1.053**	
	(-1.560)		**(0.900)**	
N	310		235	
Adjusted R^2	0.169		0.553	
Test F	1.67	*	1.12	
Hausman Test	19.46	*	71.08	

(Continue)

* 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 7 - Regression of profitability measures changes on dividend changes

(continued)

Panel C: $D/E_{i,\tau} - D/E_{i,\tau-1} = \alpha + \beta_1 \text{ DI x } \Delta D_{i,0} + \beta_2 \text{ DD x } \Delta D_{i,0} + \beta_3 \text{ D/E}_{i,\tau-1} + \beta_4 (\text{D/E}_{i,0} - \text{D/E}_{i,-1}) + \varepsilon_{i,t}$

UK				
Coefficient	**FEM**			
	τ = 1		**τ = 2**	
Constant				
DIEI x $\Delta D_{i,0}$	**-0.252**	*	**1.444**	
	(-6.569)		**(0.573)**	
DIED x $\Delta D_{i,0}$	**0.078**	*	**1.724**	
	(3.342)		**(0.541)**	
DDEI x $\Delta D_{i,0}$	**0.082**	*	**-4.763**	
	(4.779)		**(-1.185)**	
DDED x $\Delta D_{i,0}$	**-0.000**		**-0.753**	
	(-0.587)		**(-0.552)**	
ROE $_{i,\tau-1}$	**-0.001**		**-0.747**	*
	(-0.650)		**(-9.246)**	
ROE $_{i,0}$-ROE $_{i,-1}$	**0.000**		**-0.086**	
	(0.053)		**(-1.608)**	
N	2,797		2,350	
Adjusted R^2	0.149		0.305	
Test F	2.57	*	1.89	*
Hausman Test	46.52	*	19.16	*

Panel D:
$WCR_{i,\tau} - WCR_{i,\tau-1} = \alpha + \beta_1 \text{ DI x } \Delta D_{i,0} + \beta_2 \text{ DD x } \Delta D_{i,0} + \beta_3 \text{ WCR}_{i,\tau-1} + \beta_4 (\text{WCR}_{i,0} - \text{WCR}_{i,-1}) + \varepsilon_{i,t}$

Portugal				
Coefficient	**Pooled OLS**			
	τ = 1		**τ = 2**	
Constant	**1.766**	*	**2.106**	*
	(4.380)		**(5.598)**	
DI x $\Delta D_{i,0}$	**-0.322**		**-4.563**	**
	(-1.084)		**(-2.085)**	
DD x $\Delta D_{i,0}$	**3.618**	**	**3.100**	*
	(2.340)		**(2.785)**	
ROE $_{i,\tau-1}$	**-0.674**	*	**-0.868**	*
	(-4.874)		**(-13.704)**	
ROE $_{i,0}$-ROE $_{i,-1}$	**-0.200**		**0.051**	***
	(-1.623)		**(1.904)**	
N	364		347	
Adjusted R^2	0.421		0.441	
Test F	0.65		0.54	
Hausman Test	26.97	*	25.5	*

(Continue)

* 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 7 - Regression of profitability measures changes on dividend changes

(continued)

Panel D:

$$WCR_{i,\tau} - WCR_{i,\tau-1} = \alpha + \beta_1 \, DI \times \Delta D_{i,0} + \beta_2 \, DD \times \Delta D_{i,0} + \beta_3 \, WCR_{i,\tau-1} + \beta_4 \, (WCR_{i,0} - WCR_{i,-1}) + \varepsilon_{i,t}$$

France

Coefficient	**FEM**		**Pooled OLS**	
	τ = 1		**τ = 2**	
Constant			**0.220**	*
			(3.377)	
DI x $\Delta D_{i,0}$	**4.273**	**	**-0.686**	
	(2.216)		**(-0.449)**	
DD x $\Delta D_{i,0}$	**-8.838**	***	**6.288**	
	(-1.693)		**(1.608)**	
$D/E_{i,\tau-1}$	**-0.816**	*	**-0.181**	*
	(-10.294)		**(-3.511)**	
$D/E_{i,0}$-$D/E_{i,-1}$	**0.045**		**0.020**	
	(0.696)		**(0.273)**	
N	309		235	
Adjusted R^2	0.195		0.114	
Test F	1.44	**	1.20	
Hausman Test	145.71	*	52.8	*

UK

Coefficient	**FEM**			
	τ = 1		**τ = 2**	
Constant				
DIEI x $\Delta D_{i,0}$	**-1.180**		**3.769**	**
	(-0.698)		**(2.018)**	
DIED x $\Delta D_{i,0}$	**-0.714**		**4.167**	
	(-0.298)		**(1.601)**	
DDEI x $\Delta D_{i,0}$	**1.041**		**-0.712**	
	(1.279)		**(-0.771)**	
DDED x $\Delta D_{i,0}$	**-0.341**		**-0.065**	
	(-0.423)		**(-0.080)**	
$ROE_{i,\tau-1}$	**-0.699**	*	**-0.718**	*
	(-15.937)		**(-17.473)**	
$ROE_{i,0}$-$ROE_{i,-1}$	**0.090**	*	**-0.028**	
	(2.912)		**(-1.050)**	
N	2,625		2,204	
Adjusted R^2	0.290		0.321	
Test F	2.73	*	2.87	*
Hausman Test	56.47	*	57.94	*

(Continue)

* 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 7 - Regression of profitability measures changes on dividend changes

(continued)

Panel E: $CF_{i,\tau} - CF_{i,\tau-1} = \alpha + \beta_1 \, DI \, x \, \Delta D_{i,0} + \beta_2 \, DD \, x \, \Delta D_{i,0} + \beta_3 \, CF_{i,\tau-1} + \beta_4 \, (CF_{i,0} - CF_{i,-1}) + \varepsilon_{i,t}$

Portugal				
	FEM		**Pooled OLS**	
	τ = 1		**τ = 2**	
Constant			**0.005**	*
			(2.761)	
DI x $\Delta D_{i,0}$	**-0.015**	*	**-0.010**	
	(-4.413)		**(-0.412)**	
DD x $\Delta D_{i,0}$	**-0.007**		**0.005**	
	(-0.857)		**(0.797)**	
$ROE_{i,\tau-1}$	**-0.637**	*	**-0.235**	**
	(-3.549)		**(-2.440)**	
$ROE_{i,0}$-$ROE_{i,-1}$	**0.186**		**-0.014**	
	(1.640)		**(-0.329)**	
N	364		347	
Adjusted R^2	0.487		0.046	
Test F	2.02	*	1.06	
Hausman Test	43.77	*	37.47	*
France				
Coefficient	**FEM**			
	τ = 1		**τ = 2**	
Constant				
DI x $\Delta D_{i,0}$	**0.144**		**-0.139**	
	(0.959)		**(-0.741)**	
DD x $\Delta D_{i,0}$	**0.037**		**0.043**	
	(0.329)		**(0.549)**	
$ROE_{i,\tau-1}$	**-1.107**	*	**-0.789**	*
	(-10.713)		**(-6.660)**	
$ROE_{i,0}$-$ROE_{i,-1}$	**0.208**	*	**-0.176**	
	(3.770)		**(-1.106)**	
N	310		235	
Adjusted R^2	0.491		0.515	
Test F	2.83	*	3.05	*
Hausman Test	131.20	*	29.52	*

(Continue)

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

Table 7 - Regression of profitability measures changes on dividend changes

(continued)

Panel E: $CF_{i,\tau} - CF_{i,\tau-1} = \alpha + \beta_1 DI x \Delta D_{i,0} + \beta_2 DD x \Delta D_{i,0} + \beta_3 CF_{i,\tau-1} + \beta_4 (CF_{i,0} - CF_{i,-1}) + \varepsilon_{i,t}$

	UK			
Coefficient	**FEM**			
	τ = 1		**τ = 2**	
Constant				
DIEI x $\Delta D_{i,0}$	**-0.104**		**0.067**	
	(-0.599)		**(0.349)**	
DIED x $\Delta D_{i,0}$	**-0.284**		**-0.454**	**
	(-1.615)		**(-2.051)**	
DDEI x $\Delta D_{i,0}$	**0.047**		**-0.016**	
	(0.543)		**(-0.123)**	
DDED x $\Delta D_{i,0}$	**0.227**	**	**0.077**	
	(2.452)		**(0.667)**	
$ROE_{i,\tau-1}$	**-0.604**	*	**-0.718**	*
	(-10.453)		**(-12.293)**	
$ROE_{i,0}$-$ROE_{i,-1}$	**0.045**		**0.128**	*
	(0.971)		**(2.769)**	
N	2,759		2,306	
Adjusted R^2	0.293		0.373	
Test F	2.47	*	3.00	*
Hausman Test	29.88	*	35.49	*

* Significantly different from zero at the 1% level

** Significantly different from zero at the 5% level

Table 8 - Regression of cumulative abnormal returns on future performance measures

This table reports estimates of regressions relating some profitability measures and dividend increases to abnormal return for the full dividend increases sample, as well as the top and bottom performance groups, considering the dependent variable as BHAR. $BHAR_3$ is the buy and hold accumulated abnormal return on the 3-day period as calculated by equation [5]; $\Delta DI_{i,0}$ is the dividend increases per share i for year 0; $\Delta DIEI_{i,0}$ is the dividend increase per share i for year 0 when earnings increases; $\Delta DIED_{i,0}$ is the dividend increase per share i for year 0 when earnings decreases; $ROA_{i,t}$ is the ROA for share i in year t; $\Delta ROA_{i,2}$ is the measure of the abnormal change in profitability during the two years after the dividend changes, computed as $(\Delta ROA_{i,2} + \Delta ROA_{i,1})/2 - \Delta ROA_{i,0}$; $CE_{i,0}$ is the capital expenditure for share i, calculated as capital expenditures to the beginning of year total assets; $\Delta CE_{i,2}$ is the change in CE during the two years after the dividend changes, computed as $(\Delta CE_{i,2} + \Delta CE_{i,1})/2 - \Delta CE_{i,0}$; $SG_{i,0}$ is the sales growth rate for share i, computed as a percentage of the previous year's sales; $\Delta SG_{i,2}$ is the change in SG during the two years after the dividend changes $(\Delta SG_{i,2} + \Delta SG_{i,1})/2 - \Delta SG_{i,0}$. The table presents the results obtained with the most appropriate model: pooled OLS, FEM and REM. The numbers in parentheses are the t-statistics corrected for heteroscedasticity using the White (1980) method. 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.

$$BHAR_i = \alpha + \beta_1 \Delta \mathrm{DI}_{i,0} + \beta_2 (ROA_{i,0} - ROA_{i,-1}) + \beta_3 \Delta ROA_{i,2} + \beta_4 (SG_{i,0} - SG_{i,-1}) + \\ + \beta_5 \Delta SG_{i,2} + \varepsilon_{i,t}$$

	Portugal	
Coefficient	**FEM**	
Constant		
$\Delta DI_{i,0}$	**0.018**	
	(1.126)	
$ROA_{i,0} - ROA_{i,-1}$	**-0.325**	**
	(-2.136)	
$\Delta ROA_{i,2}$	**-0254**	
	(-2.335)	**
$SG_{i,0} - SG_{i,-1}$	**0.005**	
	(0.325)	
$\Delta SG_{i,2}$	**0.009**	
	(0.821)	
N	147	
Adjusted R^2	0.178	
Test F	2.29	*
Hausman Test	45.32	*

(Continue)

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

Table 8 - Regression of cumulative abnormal returns on future performance measures (continued)

$$BHAR_i = \alpha + \beta_1 \Delta \mathrm{DI}_{i,0} + \beta_2 (ROA_{i,0} - ROA_{i,-1}) + \beta_3 \Delta ROA_{i,2} + \beta_4 (SG_{i,0} - SG_{i,-1}) + \beta_5 \Delta SG_{i,2} + \beta_6 (CE_{i,0} - CE_{i,-1}) + \beta_7 \Delta CE_{i,2} + \varepsilon_{i,t}$$

France

	REM	
Constant	**0.008**	
	(1.510)	
$\Delta DI_{i,0}$	**-0.749**	**
	(-2.074)	
$ROA_{i,0}$ - $ROA_{i,-1}$	**-0.053**	
	(-0.293)	
$\Delta ROA_{i,2}$	**0.088**	
	(0.630)	
$SG_{i,0}$ - $SG_{i,-1}$	**-0.026**	
	(-1.061)	
$\Delta SG_{i,2}$	**-0.011**	
	(-0.624)	
$CE_{i,0}$ - $CE_{i,-1}$	**0.706**	*
	(3.231)	
$\Delta CE_{i,2}$	**0.526**	*
	(2.861)	
N	173	
Adjusted R^2	0.476	
Test F	1.38	***
Hausman Test	3.93	

UK

	DIEI		**DIED**	
Coefficient	**FEM**		**Pooled OLS**	
Constant			**0.017**	*
			(3.658)	
$\Delta DIEI_{i,0}$	**-0.798**		**-0.860**	
	(-1.403)		**(-0.990)**	
$ROA_{i,0}$ - $ROA_{i,-1}$	**0.056**		**0.020**	
	(0.770)		**(0.186)**	
$\Delta ROA_{i,2}$	**-0.019**		**-0.088**	
	(-0.366)		**(-1.085)**	
$SG_{i,0}$ - $SG_{i,-1}$	**0.003**		**0.005**	
	(0.234)		**(0.206)**	
$\Delta SG_{i,2}$	**-0.001**		**0.008**	
	(-0.018)		**(0.447)**	
$CE_{i,0}$ - $CE_{i,-1}$	**0.163**	*	**0.143**	
	(2.832)		**(0.903)**	
$\Delta CE_{i,2}$	**0.130**	**	**0.106**	
	(2.413)		**(0.742)**	
N	1,327		431	
Adjusted R^2	0.136		0.021	
Test F	1.42	*	1.00	
Hausman Test	15.01	**	5.65	

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