SIGNALLING WITH DIVIDENDS?
THE SIGNALLING EFFECTS OF DIVIDEND CHANGE ANNOUNCEMENTS:
NEW EVIDENCE FROM EUROPE

Elisabete Vieira

Instituto Superior de Contabilidade e Administração
Universidade de Aveiro
Management Department
Rua Associação H. B. Voluntários
3811-953 Aveiro
Portugal

Tel: 351 234 380 110
Fax: 351 234 380 111

elisabete.vieira@isca.ua.pt

Clara Raposo

ISCTE
Business School
Av. Prof. Aníbal de Bettencourt
1600-189 Lisboa
Portugal

Tel: 351 21 795 86 07
Fax: 351 21 795 86 05

clara.raposo@iscte.pt

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ABSTRACT

The dividend policy is one of the most debated topics in the finance literature. One of the different lines of research on this issue is based on the information content of dividends, which has motivated a significant amount of theoretical and empirical research.

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 start by analysing the classical assumptions of dividend signalling hypothesis. The evidence gives no support for a positive relation between dividend change announcements and the market reaction for French firms, and only a weak support for the Portuguese and the 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.

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

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

EFMA Classification: 170, 150

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) work sustains that, in a perfect capital market, a 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.

A. Dividend Announcements and Share Price Reactions

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 by 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 on the American market, Travlos, Trigeorgis and Vafaes (2001) analysed the market of Cyprus, Gurgul, Madjosz and Mestel (2003), the Austrian market, and Yilmaz and Gulay (2006), the Turkey market, finding also support for the dividend information content hypothesis.

Although there are empirical evidence supporting the positive relationship between dividend change announcements and the subsequent share price reactions, some studies have not supported this idea. Studies done 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.

B. Dividend Announcements and Future Earnings

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, very recently, by Dhillon, Raman and Ramírez (2003), that have considered considering 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.

In this context, we will try to provide with 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 and empirical methodology are described in Section 3. Section 4 discusses the empirical results and section 5 provides the conclusion.

2. HYPOTHESES

We will formulate two hypotheses based on the dividend signalling assumptions. In the first hypothesis, we analyse the relationship between dividend change announcements and the share price movements around dividend announcements. In the second hypothesis, we examine the relationship between dividend change announcements and the firm's future profitability. We consider different measures of future performance, in order to examine distinct features of dividend policy: the future earnings changes, some accounting performance measures and operating performance measures. Consequently, we formulate several sub-hypotheses.

HYPOTHESIS 1 – RELATION BETWEEN DIVIDEND CHANGE ANNOUNCEMENTS AND THE MARKET REACTION

Consistent with many studies in this domain, we start by analysing the relation between dividend changes and the share price movements on the announcement period. To do so, we formulate the following alternative hypothesis:

> H_1: *"The 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 prices reaction.

HYPOTHESIS 2 – RELATION BETWEEN DIVIDEND CHANGES AND FIRM'S FUTURE PROFITABILITY

Afterwards, we will evaluate the relation between dividend changes and future firm 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 dividend signalling model assumptions that management has proprietary information concerning the firm's future performance prospects. To test this hypothesis we will consider different measures of future performance. Therefore, we will formulate several sub-hypotheses.

Firstly, we will start by considering future earnings changes as future performance, formulating the alternative sub-hypothesis H_{2A}:

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

Although we expect a positive relation between dividend changes and future earnings changes, the prior empirical evidence is not consistent.

Secondly, we will consider 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.

We will formulate this sub-hypothesis according the assumptions of dividend signalling models, so, in its alternate form, H_{2B} will be:

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

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, we will analyse and confront the maturity and the signalling hypotheses. 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.

We will formulate this sub-hypothesis according the assumptions of dividend signalling models, so, in its alternate form, H_{2C} will be:

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

If we reject the null hypothesis associated with H_{2C}, and the relation between dividend changes and future measures considered in the alternate hypothesis is direct, as predicted in the alternate hypothesis, 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 AND METHODOLOGY

In this section, we will identify which data we must collect as well as the methodology to be used in order to test the formulated hypotheses.

SAMPLE SELECTION

Our purpose is to analyse 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 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 differences in these countries associated with the ownership of equity. In Portugal and France ownership tends to be more concentrated than in the UK and this is expected to mitigate the information asymmetry problem. This would lower the importance of dividends as a signalling mechanism and consequently share price reaction to dividend change announcements would be expected to be lower in countries where ownership is more concentrated (in our study, Portugal and France).

Thirdly, we expect that the need to use dividends as a signalling device may be less pronounced in Portugal and France, as they present financial model banking based system, than in the UK market, which is a market-based country, like the US.

Finally, the fourth reason why we expect to find different results among samples is related to the legal rules covering protection of corporate shareholders. Whereas UK is a country of Anglo-Saxon influence, where information asymmetry and agency costs problems are high and, consequently, firms need to signal to the market their private information, the other two countries are characterised by a continental influence. In such countries, information asymmetries are supposedly low and so firms are not likely to use dividend payments to signal their private information.

Given these characteristics, 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 a weaker support to the dividend signalling theory in Portugal and France than in the UK.

The sample is drawn from dividend announcements of firms listed on the Euronext Lisbon (EL), Euronext Paris (EP) and London Stock Exchange (LSE). For the French and UK markets, we consider the dividend announcements between 1994[1] and 2002. Announcement dates are available on *Bloomberg* database and all other needed information is available on *Datastream* database. For the Portuguese market we consider the dividend announcements between 1988 and 2002[2].

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

1) The firm is not a financial institution. This criterion helps improve the homogeneity of the sample since financial institutions have different accounting categories and rules;

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[1] The first year (1994) is conditioned by the availability of announcement dates *on Bloomberg* database.

[2] For the Portuguese sample we consider a longer period than for the two other samples, 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.

2) The firm is listed on the respective stock exchanges the year before and two years after the dividend events. This criterion controls for firms being listed and de-listed from one year to the next and minimises the survivorship bias;
3) The firm's financial data is available on the *Datastream* database (or the *Dathis* database in the case of Portugal[3]) at the year before and two years after the dividend events and announcement dates are available on *Bloomberg* database;
4) The company paid an ordinary dividend in the current and previous year. This criterion excludes dividend initiation and omission events;
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. This criterion is likely to free the sampling period of any contaminating or noisy announcement effects. For the UK market we exclude all these announcements, except the case of earnings announcements[4].

Since we want to analyse dividend changes, our sample includes dividend events (increases, no change and decreases) from 1995 to 2002 for the French and the UK markets and from 1989 to 2002 for the Portuguese market. The samples include 84 firms for Portugal and a total of 380 events; 93 firms for France and a total of 356 events and 524 firms for the UK and a total of 3,278 events.

Table 1 reports the number of dividend events classified by sample selection criteria (Panel A) as well as the dividend events by years (Panel B).

The initial Portuguese sample contains 529 observations. The sample selection criteria resulted in a final sample of an unbalanced panel of 380 events: 158 increases, 121 decreases and 101 no change observations. It is interesting to see that in the period 1997-1999 the dividend increases are more frequent than the other events, whereas in 2000-2002 they are more similar to the other events, denoting a convergence in the number of events.

[3] For the Portuguese sample we needed to collect financial statements additionally on *Euronext* dossiers, Comissão do Mercado de Valores Mobiliário (CMVM), Diário da República and directly from some firms. The Portuguese data was one of the most onerous information to obtain.

[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).

The initial sample of the French market contains 1,056 observations. The final sample is an unbalanced panel data of 356 events: 235 increases, 62 decreases and 59 no change observations.

The UK sample consists of 3,559 initial events and the final sample has 3,278 events: 2,662 increases, 273 decreases and 343 no change events. As Panel B shows, the recent period between 2000 and 2002 is the one with a higher number of dividend events, as in the French market.

In all the markets we saw that the year of 2001 was characterised by a decrease in the dividend increase events and an increase in the dividend decrease events, which is in accordance with the slowing down of the world economic growth.

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. However, we would like to emphasise, for the Portuguese sample, the significant number of dividend decreases (about 32% of sample events), when compared with the French and the UK samples, as well as the major number of empirical works in this domain. Portuguese percentages are similar to the ones of some emergent markets, such as Thailand and Korea, and not with Anglo-Saxon, as we can see schematically[5]:

			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

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.

Table 2 provides summary statistics on dividend events and some financial ratios. We consider the changes in DPS both in monetary units and in percentage, the payout ratio

[5] One possible explanation for these sample statistics may be the exposure of emerging and Portuguese markets to more economic risks.

(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.

In what concerns the Portuguese sample, and for all the dividend events, the mean DPS is 0.46 euros, with a median of 0.35, the mean dividend payout is 64.1%, with a median of 44% and the dividend yield mean is 0.13. The rate of changes in DPS relative to the previous year has a mean (median) of 2.06 percent (0 percent). The mean debt ratio is 0.39. The current ratio averaged 1.99 and the return on equity 8.9%. Overall, the Portuguese sample can be described as consisting of relatively low debt firms, with high payout and liquidity ratios and relatively profitable.

The French sample presents a mean DPS of 1.24 euros, with a median of 0.86, the mean dividend payout is 29.6% and the median is 18% and the dividend yield mean is 0.02[6]. The mean debt ratio is 0.25. The rate of changes in DPS relative to the previous year has a mean (median) of 13.05 percent (9.22 percent). The current ratio averaged 1.36 and the return on equity 5.1%. Overall, the French sample can be described as consisting of low debt firms, with relatively high dividend per share, low dividend payout and relatively low equity return.

The UK sample presents a mean DPS of 8.47 pounds, with a median of 6.36, the mean dividend payout is 0.51, with a median of 0.43. The rate of changes in DPS relative to the previous year has a mean (median) of 13.91 percent (9.66 percent). The mean debt ratio is 0.21. The current ratio averaged 1.48 and the ROE is 13.1%. Overall, the UK sample can be described as consisting of profitable firms (the UK firms present the higher value for the ROE), with low debt and high dividend payments.

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 increased their dividends are in a middle range.

[6] Romon (2000) found an average dividend yield of 0.023 in his French sample, for the period between 1991 and 1995, similar to our value.

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 present 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 results are an indication that the UK market is the main capital market of our sample and Portugal is the small one, being the French market in a middle position.

METHODOLOGY

Our samples are an unbalanced panel data. Employing the panel data methodology, we use the three common techniques for estimating models with panel data, which are the pooled ordinary least squares (OLS), the fixed effects model (FEM), and the random effects model (REM). Subsequently, we will 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 the 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 will use the following model:

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

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 seeing 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.

A. Methodology to Test Hypothesis 1

We assume that dividends follow a random walk, so the dividend changes were used as the proxy for the unexpected dividend changes. Although the UK usually distributes quarterly dividends, we will analyse the annual dividends as *Datastream* only provides the total yearly DPS. In addition, we need to adapt the methodology when analysing this sample. 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, according to the scheme presented below:

Announcement Type		**Dividends**		
		Increases	No-changes	Decreases
Earnings	Increases	DIEI	DNCEI	DDEI
	Decreases	DIED	DNCED	DDED

Type of events for the UK, according the relation between dividends and earnings

Thus, we will analyse the following situations: 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). We will pay special attention to the cases where dividend and earning changes take opposite directions (DIED and DDEI).

The general adaptation will consist on the splitting of the sample in these groups, or considering 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[7]:

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

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.

Firstly, we measure the market reaction to dividend change announcements considering the abnormal returns calculated through the CAPM:

$$AR_{i,t} = R_{i,t} - \left[R_{f,t} + \beta_i \left(R_{m,t} - R_{f,t}\right)\right] \qquad [3]$$

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:

$$CAR_{i,t} = \sum_{t=-1}^{t=1} (AR_{i,t}) \qquad [4]$$

where t = 0 is the dividend announcement day in the stock exchange journal.

[7] 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.

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 *a* to *b* [$BHAR_{i\,(a\text{ to }b)}$] generating model takes the following form:

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

The time period *a* to *b* constitutes three trading days from t = -1, 0 +1. The average abnormal returns are calculated as follows:

$$\overline{BHAR} = \frac{1}{\mathrm{N}}\sum_{\mathrm{i=1}}^{\mathrm{N}}\mathrm{BHAR_i} \qquad [6]$$

where N is the number of observations.

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:

$$CAR3_i = \alpha + \beta_1\ \mathrm{DI\ x\ \Delta\ D_{i,0}} + \beta_2\ \mathrm{DD\ \ x\ \Delta D_{i,0}} + \varepsilon_{i,t} \qquad [7a]$$

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 [7a] 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:

$$CAR3_i = \alpha + \beta_1 \text{ DIEI x } \Delta \text{ D}_{i,0} + \beta_2 \text{ DIED x } \Delta\text{D}_{i,0} + \beta_3 \text{ DDEI x } \Delta \text{ D}_{i,0} + \\ + \beta_4 \text{ DDED x } \Delta \text{ D}_{i,0} + \varepsilon_{i,t} \quad [7b]$$

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.

B. Methodology to Test Hypothesis 2

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

Methodology to test sub-hypothesis 2A

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[8]. The standardized change in earnings for share i in year t, $\Delta E_{i,t}$, is therefore defined as:

$$\Delta E_{i,t} = \frac{(E_{i,t} - E_{i,t-1})}{BV_{i,t-1}} \quad [8]$$

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:

[8] 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.

$$(\mathrm{E}_{i,\tau} - E_{i,\tau-1}) / BV_{i,-1} = \alpha + \beta_1 \text{ DI x } \Delta \text{ D}_{\text{i,0}} + \beta_2 \text{ DD x } \Delta\text{D}_{\text{i,0}} + \beta_3 ROE_{i,\tau-1} + + \beta_4 (E_{i,0} - E_{i,-1}) / BV_{i,-1} + \varepsilon_{i,t} \qquad [9a]$$

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:

$$(\mathrm{E}_{i,\tau} - E_{i,\tau-1}) / BV_{i,-1} = \alpha + \beta_1 \text{ DIEI x } \Delta \text{ D}_{\text{i,0}} + \beta_2 \text{ DIED x } \Delta\text{D}_{\text{i,0}} + + \beta_3 \text{ DDEI x } \Delta \text{ D}_{\text{i,0}} + \beta_4 \text{ DDED x } \Delta\text{D}_{\text{i,0}} + \beta_5 ROE_{i,\tau-1} + + \beta_6 (E_{i,0} - E_{i,-1}) / BV_{i,-1} + \varepsilon_{i,t} \qquad [9b]$$

The regression [9] includes the 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:

$$(\mathrm{E}_{i,\tau} - E_{i,\tau-1}) / BV_{i,\ 1} = \alpha + \beta_1 \Delta\text{D}_{\text{i,0}} + \begin{pmatrix} \gamma_1 + \gamma_2 NDFED_0 + \gamma_3 NDFED_0 * DFE_{i,0} + \\ \gamma_4 PDFED_0 * DFE_{i,0} \end{pmatrix} * \text{DFE}_{i,0} + (\lambda_1 + \lambda_2 NCED_0 + \lambda_3 NCED_0 * CE_{i,0} + \lambda_4 PCED_0 * CE_{i,0}) * \text{CE}_{\text{i,0}} + \varepsilon_{i,t} \qquad [10]$$

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.

Methodology to test sub-hypothesis 2B

Next, we would like to address issues concerning the *window dressing* phenomenon as well as to see if dividend changes are associated with future cash flows.

For testing the respective sub-hypothesis, we consider a regression similar to the regression [9] 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 cash flow (CF) measure. The following regression model is estimated:

$$PM_{i,\tau} - PM_{i,\tau-1} = \alpha + \beta_1 \,\text{DI x}\,\Delta \text{D}_{\text{i,0}} + \beta_2 \,\text{DD x}\,\Delta\text{D}_{\text{i,0}} + \beta_3 \,\text{PM}_{i,\tau-1} + \beta_4 \,(\text{PM}_{\text{i,0}} - \text{PM}_{\text{i,-1}}) + \varepsilon_{i,t} \qquad [11a]$$

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:

$$\begin{aligned} PM_{i,\tau} - PM_{i,\tau-1} = \alpha &+ \beta_1 \,\text{DIEI x}\,\Delta \text{D}_{\text{i,0}} + \beta_2 \,\text{DIED x}\,\Delta\text{D}_{\text{i,0}} + \beta_3 \,\text{DDEI x}\,\Delta\text{D}_{\text{i,0}} + \\ &+ \beta_4 \,\text{DDED x}\,\Delta\text{D}_{\text{i,0}} + \beta_5 \,\text{PM}_{i,\tau-1} + \beta_6 \,(\text{PM}_{\text{i,0}} - \text{PM}_{\text{i,-1}}) + \varepsilon_{i,t} \end{aligned} \qquad [11b]$$

Based on dividend signalling hypothesis assumptions, we expect that dividend increasing firms display further improvements in their financial profiles during the post announcement periods. On the other hand, dividend decreasing firms should demonstrate a further deterioration in reported financial performance in the post announcement years.

Methodology to test sub-hypothesis 2C

In addition, we would like to analyse the maturity hypothesis. 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 verify 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 initial market reaction to dividend increase announcements and focus the analyses on the extent to which the initial market reactions anticipate the operating performance, capital expenditures and changes in sales growth. The following equation, based on Grullon, Michaely and Swaminathan (2002), is used to investigate these issues:

$$\begin{aligned} CAR3_i = {} & \alpha + \beta_1 \Delta \mathrm{DI}_{i,0} + \beta_2 (ROA_{i,0} - ROA_{i,-1}) + \beta_3 \Delta ROA_{i,2} + \beta_4 (SG_{i,0} - SG_{i,-1}) + \\ & + \beta_5 \Delta SG_{i,2} + \beta_6 (CE_{i,0} - CE_{i,-1}) + \beta_7 \Delta CE_{i,2} + \varepsilon_{i,t} \end{aligned} \qquad [12a]$$

where:

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

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

$$CAR3_i = \alpha + \beta_{1A}\,\Delta\,\mathrm{DIEI}_{i,0} + \beta_{1B}\,\Delta\,\mathrm{DIED}_{i,0} + \beta_2\,(ROA_{i,0} - ROA_{i,-1}) + \beta_3\,\Delta ROA_{i,2} + \\ + \beta_4(SG_{i,0} - SG_{i,-1}) + \beta_5\,\Delta SG_{i,2} + \beta_6(CE_{i,0} - CE_{i,-1}) + \beta_7\,\Delta CE_{i,2} + \varepsilon_{i,t} \qquad [12b]$$

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 initial market reaction, and the coefficients will be statistically significant.

H_1 and H_{2A} are consistent with the major prior studies that analyse the market reaction around dividend change announcements and the relation between dividend changes and future earnings, and therefore, allowing to compare our results with those obtained by previous researchers. The other sub-hypotheses introduce some innovations.

4. EMPIRICAL RESULTS

We present the empirical results according the hypotheses formulated in the precedent section.

In order to test for the stability in the dividend policy, we run the regression [1][9]. Table 3 reports the estimates of Lintner's model. We report, for each country, the pooled OLS, the FEM and the REM results as well as the F test and the Hausman's statistic results in order to choose the best model to work with. The most appropriate specification of Lintner's model is the OLS, for Portugal, and the FEM, for the French and the UK samples.

For the Portuguese sample, this methodology enables us to determine 51 listed firms, with a total of 383 observations. Based on pooled OLS results, 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 but not statistically significant when corrected for heteroscedasticity, showing no evidence that the lagged dividends determine the dividend policy. This value is equal to 0.197, which is very small, suggesting no evidence that Portuguese firms have stable dividend policies. For

[9] 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)].

the US market, Dewenter and Warther (1998) found a value of 0.945 for this coefficient, with data from 1982 to 1993 and Aivazian, Booth and Cleary (2003a) found the value of 0.878, considering the period from 1980 through 1990. For the 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 0.611 (Zimbabwe). Benzinho (2004) found a value of 0.352 for the Portuguese market, which is different from our value; however, he studied a smaller sample in a different period[10]. In other words, the speed of adjustment (c) in the Portuguese case is 0.803. It suggests 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. These results are an indication that in the US, any change in earnings is more directly reflected in cash dividends than in Portugal. On the whole, these results do not support the Lintner smoothing model, suggesting that in Portugal dividend policy plays a less significant role in signalling than it does in the US market.

In what concerns the French sample, we have 136 listed firms, with a total of 978 observations. Based on the FEM results, we can see that the value of the lagged dividend per share is equal to 0.060, but it is statistically not significant. The speed of adjustment (c) in the French market is one of the highest, of 0.94, near the +1 limit in which firms do not smooth dividends. Consequently, the results suggest that dividend policy for French firms is less predictable than in Portugal. Finally, the earnings per share coefficient, is 0.046. Although statistically significant, is lower than the one found for the Portuguese sample, with any change in earnings being less directly reflected in cash dividends than in Portugal. On the whole, these results suggest that, in accordance to the Portuguese results, dividend policy in France is not about smoothing dividends. Thus, in Portugal and France, dividend policy plays a less significant role in signalling than it does in the US market, as we have expected.

[10] 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.

Finally, for the UK market we have 467 listed firms, with a total of 3,348 observations. One important point for the FEM results is that Lintner 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), of 0.945 and, especially, by Aivazian, Booth and Cleary (2003a), of 0.878. This result is an indication that, like the US firms, also the UK firms have stable dividend policies. In other words, the speed of adjustment in the UK case is 0.200, which means that UK firms, as well as the US firms, smooth dividends. Finally, the earnings per share coefficient is positive, but low and not significant (0.012), so, the main factor that determines the dividends in the UK sample is the lagged dividends. 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 smooth the dividends. Thus, we conclude that, as expected, dividend policy plays a less significant role in signalling in Portugal and France, than in the UK. Probably because the reliance of civil law countries, like Portugal and France, on bank debt and their closely held nature reduce the information problems in the context of outside capital. In a study made by Goergen, Renneboog and Silva (2005) in the Germany market (which is also a civil law country), the authors conclude that in German, because of the concentrated ownership, firms may not need to use dividends as a signal, which is in agreement with our conclusion.

RESULTS OF THE FIRST HYPOTHESIS

Abnormal Returns

In order to verify whether dividend changes are associated with subsequent share price reactions in the same direction, we calculate abnormal returns.

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

In what concerns the Portuguese sample, we can see that (Panel B) for the event period and the dividend no change announcements, we find a non-significant buy-and-hold abnormal return. 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 announced can be due to the market illiquidity or to the concentration of the corporate ownership, which makes dividend announcements less relevant. These results suggest 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 the inefficiency of the market. These results suggest that the need to use dividends as a signalling device must be less pronounced in Portugal than in the US and UK (where the major number of studies found statistically significant abnormal returns), where corporate ownership is more dispersed and stock markets are more important, namely in the firms' financing[11].

[11] Although to-date little is still known about dividend policy of firms operating outside the Anglo-American corporate governance system, Goergen, Renneboog and Silva (2005) also find that in Germany,

In what concerns the French sample, Panel A presents the cumulative abnormal returns with returns calculated based on CAPM. All the CARs for the announcement period present insignificant values. This evidence is similar to Lasfer and Zenonos (2004) who also obtain statistically insignificant share price reaction around the dividend announcement dates in the French market. The insignificant abnormal returns on the announcement period, as in Portugal, 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.

Regarding the other periods, the results are quite similar to the ones of Portugal, indicating market anticipation for dividend decreases and suggesting some inefficiency of the market in what concerns dividend increases. Finally, dividend decreases lead to a higher market reaction that dividend increases, like in the Portuguese market.

Panel B shows the market adjusted buy-and-hold returns for dividend announcements. In global terms, although the level of significance is lower than in the CAR approach, results are similar to the ones obtained by CAR, so the conclusions maintain the same.

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 descriptive statistics for these groups are 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

because of the concentrated ownership, firms may not need to use dividends as a signal. Our results also suggest that the Portuguese market can be nearer to developing countries than to the US or UK markets, in accordance with the opinion of Aivazian, Booth and Cleary (2003b), who conclude that the heavy reliance on bank financing and the relative small emphasis placed on external capital markets as a source of finance in developing economies alleviates the informational asymmetry problems and reduces the signalling value associated with dividends. Furthermore, in what concerns dividend decreases, it suggests that investors prefer dividends over capital gains, confirmed by evidence found, in the Portuguese market, by Fernandes and Martins (2002). These authors found that if firms decrease the payment of dividends, shareholders prefer to decline their consumption level instead of selling shares, which shows evidence of a preference for dividends over capital gains and gives support to the Shefrin and Statman (1984) conclusions.

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. As expected, the smallest number of observations (108) was found in the DDEI group. If we analyse the different categories that compose the three main events (dividend increases, dividend no-changes and dividend decreases) we can see that, of the 2,662 events of dividend increases, 1,931 (72.5 percent) announced higher profits and 731 (27.5 percent) disclosed a fall in profits. Of the 343 events that did not change dividends, 141 (41.1 percent) present an increase in earnings and 202 (58.9 percent) present a decrease. Finally, of the 273 events of dividend cuts, 108 (39.6 percent) announced an increase in earnings, while the majority, 165 events (60.4 percent) reported a fall in earnings. Our relative values are similar to the ones found by Abeyratna and Power (2002), except for the two groups of dividend decreases, as they found a smaller percentage for DDEI (17 percent) and, consequently, a higher percentage for DDED (83 percent).

The abnormal returns for the UK sample are presented also in Table 4, but considering the different six groups defined above.

Panel A presents the cumulative abnormal returns based on CAPM. 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, 1.68% and 1.81%. 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, being all the abnormal returns statistically significantly different from zero at 1 % level. 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 is that 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, and reacts positively [Abeyratna and Power (2002)]. All the excess returns are statistically significant in the periods -2 to +2 and -5 to +5, which suggests the market reacts also in a longer period rounding the announcement date[12].

As we can see in Panel B, the results based on the BHAR method are quite similar, so we maintain our conclusions.

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, and in the other two samples of our study, 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)

[12] To evaluate the robustness of the results, we repeated the analysis using two different periods, the period between the announcement day and the day after (0,+1) and the abnormal return in the day after the announcement day (+1) and the results were similar.

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 C of Table 4 presents the cross-sectional distribution of the three-day abnormal returns for the three samples: Portugal, France and the UK.

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. In a very recent study, 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 (Panel A and B).

Vieira (2005) 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. She concludes 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.

Relation between Dividend Changes and Abnormal Returns

In order to analyse the relation between the wealth effect and dividend changes, we estimate equation [7]. 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, and for the UK sample, the best one is the REM.

For the Portuguese sample, based on pooled OLS results, 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, showing that a zero change in dividends by itself holds little useful information to the market. 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 only reject the null hypothesis for dividend increases, supporting the dividend-signalling hypothesis only for this type of announcement. In what concerns the dividend decreases we cannot reject the null hypothesis and thus our results do not support this hypothesis. 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. The results of Panel A and B are quite similar. Since none of the coefficients are statistically significant, besides the fact that the coefficient on dividend increase announcements has a negative value, we cannot reject the null hypothesis and thus our results do not support the dividend-signalling hypothesis.

Finally, we analyse the UK results based on the REM model. 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. The negative signal of the coefficient on DDEI, although not significant, could be an indication that although the dividend decreases, the return measure surrounding the announcement has increased. This is in accordance with Woolridge and Ghosh (1985) opinion that a dividend cut, if combined with earnings increase, may signal good news to the market, in contrast with the prediction of the information content hypothesis.

Robustness

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 $\beta=1$ for all firms. In all cases we obtain similar results[13], 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. This is in accordance to what we have predicted for the Portuguese and French sample, for reasons explained before, related, namely, with the bank based system, the concentrated ownership of equity and the level of protection of corporate shareholders.

For the UK sample, our results seem to be nearer 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), Benartzi et al. (2005) and Chen, Firth and Gao (2002).

TEST RESULTS OF THE SECOND HYPOTHESIS

To analyse the relationship between dividend change announcements and future performance, we formulate distinct sub-hypotheses, where the main difference is the variable we use to measure the future performance.

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

Test Results of Sub-hypothesis H_{2A}

We start by considering future earnings changes as future performance with the purpose to test whether dividend change announcements contain information about future earnings, consistent with the assumption of the dividend signalling model.

Regression results assuming linear mean reversion in earnings

We consider the regression [9], 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 information on future earnings changes, incremental to the earnings variations, 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) in the years 1989 through 2002, for the Portuguese sample, and in the years 1995 through 2002, for the French and the UK sample, and we have earnings data through 2002, the sample includes dividend events that occurred until 2001 for $\tau = 1$ and until 2000 for $\tau = 2$.

Assuming linear mean reversion in earnings[14], 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. The results indicate that dividend decrease announcements for $\tau = 1$ and dividend and earnings increase announcements for $\tau = 2$ convey some information about future earnings 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 UIK market.

Regression results controlling for the non-linear patterns in the earnings

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 the regression [10]. The pooled OLS model is the most appropriate for the Portuguese sample, the FEM for τ =1 and the

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

pooled OLS for τ =2 are the best for the French sample, and the FEM for τ =1 and the REM for τ =2 are the most appropriate for the UK sample.

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. Neither of the other coefficients on dividend changes is significantly different from zero. For the French sample, none of the coefficients on dividend changes is statistically 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.

Summarising, accounting for non-linearities in the mean reversion process, leads to the conclusion that changes in dividends are not very useful in predicting future earnings changes. On global terms, the results cannot 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.

Test Results of Sub-hypothesis H_{2B}

Testing this sub-hypothesis is possible to examine whether changes in dividends forecast future profitability and to analyse the *window dressing* phenomenon. For that, we consider a regression similar to [9] but with five different dependent variables to measure distinct aspects of financial performance: ROE, ROA, D/E, WCR and CF.

The estimation results of regression [11] are shown in Table 7, from Panel A to Panel E, respectively for the profitability measures of ROA, ROE, D/E, WCR and CF. The best model for each regression is highlighted, being in most of the regressions, the FEM. The most significant regressions are the regression on ROE for the UK, on WCR for Portugal and on Cash Flow for the French sample.

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.

Panel A shows the cases where the profitability measure is the ROA. Regarding the coefficients on dividend changes, most coefficients are indistinguishable from zero. Consistent with the evidence of Benartzi *et al.* (2005), these results indicate that firm profitability is not positively associated with past change in dividends. The exceptions are the coefficients on dividend increases for $\tau=1$, in the Portuguese sample, the coefficient on dividend decreases for $\tau=2$, in the French sample, and, finally, in the UK sample, the one on dividend increases and earnings decreases for $\tau=1$, all of them negative. This result is in accordance with Grullon, Michaely and Swaminathan (2002), who found evidence of a negative relation between dividend changes and the subsequent return on assets, suggesting evidence of the maturity hypotheses instead of the dividend signalling hypothesis.

Panel B shows the case where the profitability measure is the ROE. The results suggest the lack of correlation between dividend changes and future profitability for the Portuguese and the French samples. However, in the UK sample, we have evidence of a negative and significant relationship between dividend increases and future profitability for $\tau = 1$ (independently of earnings changes) and between dividend increases and earnings decreases and future profitability for $\tau = 2$, which is consistent with the results of Abeyratna and Power (2002). Overall, these results are not consistent with the dividend signalling hypothesis.

Panel C reports the case where the performance measure is the D/E gearing measure. None of the coefficients is significant in the Portuguese sample. In the French sample, the coefficient on dividend decreases is positive and statistically significant for $\tau = 1$ and with a 10% level, suggesting a weak evidence of correlation between dividend changes and future debt to equity ratio. For the case of the UK, the coefficients on DIEI, DIED and DDEI for $\tau = 1$ are statistically significant at 1%, being the first one negative, contrary to what is expected, and the other two positive. Except for the negative coefficient (DIEI), the other significant coefficients are in accordance with the dividend signalling hypothesis[15].

Panel D reports the case where the performance measure is the WCR liquidity measure. For the Portuguese sample, the coefficient on dividend increases is negative but only statistically significant for $\tau = 2$ and the coefficient on dividend decreases is positive and statistically significant for both $\tau = 1$ and $\tau = 2$. The coefficients on dividend changes in the French sample are both significant for $\tau = 1$, being the coefficient on dividend increases positive, and the one of dividend decreases negative. For the UK sample, only for $\tau = 2$ we have a coefficient statistically significant, and positive, which is the one of dividend and earnings increases. Because of the different signals obtained, we do not have evidence of a clear relationship between dividend changes and the future liquidity. However, the evidence of the dividend decrease associated with better future liquidity ratios, in the case of the French sample, in addition with the evidence that dividend decreases are not significantly associated with future earnings changes (Table 6) suggests that, according to Abeyratna and Power (2002), dividend decreases may not be bad news to the market concerning firms' future earnings, as assumed by signalling theory, but rather reflect managers' decisions to solve firms' financial problems.

Finally, Panel E reports the case where the performance measure is CF. The results show that for the first year after the dividend announcements, the relation between dividend increases and CF variation is negative and statistically significant for the Portuguese sample. For the UK sample, the relation between both dividend and earnings decreases (DDED) and CF variation is positive and statistically significant for $\tau = 1$, and the relation between dividend increases and earnings decreases (DIED) and CF variation is negative and statistically significant for $\tau = 2$. The evidence that cash flow decreases after the dividend increases is consistent with the maturity hypothesis [Grullon, Michaely and Swaminathan (2002)] and not with the signalling theory. All the other coefficients on dividend changes are indistinguishable from zero. It appears that firms do not signal impending cash flow jumps by raising their dividends.

[15] The dividend signalling hypothesis argues that managers increase dividends when they are optimistic about the future performance of the firm and that they decrease dividends when they are pessimistic. According this hypothesis, we would expect dividend increasing (decreasing) firms to increase (decrease) there debt level, since they will have an improvement (deterioration) in their future debt capacity and in their ability to serve larger debt.

Summarising the results of this sub-hypothesis, we fail to reject the null hypothesis associated with H_{2B} for several coefficients on dividend changes for the three markets, especially 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, but, instead, provides some support for 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.

Test Results of Sub-hypothesis H_{2C}

Now we will evaluate different post-announcement measures in order to analyse the maturity hypothesis. If market 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 initial market reaction. The results of regression [12] are shown in Table 8, considering the initial market reaction as the BHAR measure[16].

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 initial market reaction and current, as well as future capital expenditures for the two markets which consider these two variables in the regression: the French and the UK market, 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

[16] We have analysed the correlation between coefficients but, once again, for simplicity reasons, we do not report the results. We consider also the CAR measure, but the results are similar, so we do not present them. However, they are available from authors upon request.

relationship between the initial market reaction and current, as well as future change in the ROA. These results suggest that market 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 can be explained, as suggested by Grullon, Michaely and Swaminathan (2002, p. 438), by *"an expected decrease in the agency costs of free cash flows"*[17]. This point of view is closer to the maturity hypothesis. However, the positive relationship between 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.

Summarising the results, we find some evidence of the maturity hypothesis, consistent with the results of Grullon, Michaely and Swaminathan (2002) and Lai, Song and Fung (2004).

Vieira (2005) split the dividend increases sample according the post-announcement ROA: the top performance group, the middle and the bottom performance group, to see whether different operating performance groups have different variables behaviour and whether the signalling and the maturity hypothesis can co-exist[18]. Vieira found some evidence of the signalling hypothesis in the top performance group. Furthermore, she finds some 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 distinct behaviour is not so evident. These results give weak support to the evidence that the market reacts differently to the distinct groups. Her results are quite consistent with the ones of Lai, Song and Fung (2004).

[17] 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.
[18] For more details, see Vieira (2005), p. 126-128 and 150-151.

5. CONCLUSIONS

Summarising the results obtained when testing the hypothesis one and two (considering the several sub-hypotheses), we can reach to 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. In the Portuguese and in the French markets we find no significant market reaction to dividend change announcements, which do not support the hypothesis that dividend changes communicate significant new information to the 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, namely by the effect of concentrated corporate ownership, firm's financing and level of protection of corporate shareholders. 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 the relation between dividend change announcements and share price reaction is reverse. 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 positive market reaction to dividend decrease announcements in the UK market is an enigmatic situation reflecting this reverse reaction;
- 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. This is in accordance to what we have predicted for the Portuguese and French sample. For the UK sample, our results seem to be nearer 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);
- For the Portuguese and the French market, we find evidence that dividend change announcements have no influence on future earnings. Consequently, we are unable to find any evidence to support the view that changes in dividends have information

content about future earnings changes, and, consequently, the results cannot support the assumption of dividend signalling hypothesis that dividend change announcements are positively related with future changes in earnings. These results are consistent with the early findings of Watts (1973) and Benartzi, Michaely and Thaler (1997), as well as some recent studies, such as the ones of Grullon, Michaely and Swaminathan (2002) and Benartzi *et al.* (2005), all of them obtained in the US market. For the UK market, we find evidence that only dividend decrease announcements contain information on future earnings, incremental to the current earnings, but just for the first year after the dividend change announcement, thus, we find only weak support for the information content of dividend hypothesis in the UK market. The UK results also 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);

- Comparing dividend change announcements with future performance measures, our evidence gives no support to the dividend signalling hypothesis which predicts a positive association between dividend change announcements and subsequent performance measures, but, instead, provide some support for the window dressing phenomenon and the free cash flow hypothesis of Jensen (1986), and a stronger support for the maturity hypothesis [Grullon, Michaely and Swaminathan (2002)]. This evidence is reinforced with the hypothesis H_{2C} tests, where variables post-announcement behaviour are in agreement with the predictions of the maturity hypothesis, giving some support to that hypothesis [Grullon, Michaely and Swaminathan (2002) and Lai, Song and Fung (2004)]. 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 firms do not need to use dividends as a signal, which is in accordance with Goergen, Renneboog and Silva (2005) conclusions.

SUGGESTIONS FOR FUTURE RESEARCH

The issue of the information content of dividends is far from been solved. As Black (1976, p. 5) comments: *"What should corporations do about dividend policy? We don't know"*. Very recently, about the dividend subject, Chu and Partington (2005, p. 2) state that *"(...) this remains a controversial issue"*. Thus, the research in this domain of corporate finance is still not over.

The evidence of the phenomenon of an inverse relationship between dividend changes and market reaction motivate us for further research. Thus, a possible path of future research might be the consideration of a new approach to investigate the relationship between the market reaction to dividend changes and future earnings changes with the purpose of understanding why the market sometimes reacts negatively (positively) to dividend increases (decreases), trying to identify when a dividend increase announcement could be bad news, and when a dividend decrease announcement could be good news.

For robustness reasons, we will try to consider, in spite of the dividend changes, the dividend forecasts, when computing unexpected dividend changes, and the dividend yield ratio, in order to see if the main conclusions are unchanged.

Finally, we would like to identify firm-specific factors that contribute in explaining the adverse market reaction to dividend change announcements.

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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 (Panel A) as well as the frequency of dividend changes by year (Panel B). 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.

Portuguese Sample

Panel A: Sample	Dividend Increases	No Change	Dividend Decreases	Total
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**

Panel B: Frequency of dividend changes by year

	Dividend Increases		No Change		Dividend Decreases		Total for Year	
	Number	Percent. (%)	Number	Percent. (%)	Number	Percent. (%)	Number	Percent. (%)
1989	26	16.46	16	15.84	16	13.22	58	15.26
1990	21	13.29	5	4.95	14	11.57	40	10.53
1991	13	8.23	14	13.86	11	9.09	38	10.00
1992	12	7.59	9	8.91	15	12.40	36	9.47
1993	9	5.70	13	12.87	6	4.96	28	7.37
1994	5	3.16	6	5.94	11	9.09	22	5.79
1995	5	3.16	6	5.94	6	4.96	17	4.47
1996	6	3.80	6	5.94	4	3.31	16	4.21
1997	11	6.96	4	3.96	5	4.13	20	5.26
1998	14	8.86	3	2.97	6	4.96	23	6.05
1999	16	10.13	5	4.95	4	3.31	25	6.58
2000	9	5.70	7	6.93	8	6.61	24	6.32
2001	5	3.16	2	1.98	10	8.26	17	4.47
2002	6	3.80	5	4.95	5	4.13	16	4.21
Total	**158**	**100.00**	**101**	**100.00**	**121**	**100.00**	**380**	**100.00**

(Continue)

Table 1 - Sample Selection (continued)

French Sample				
Panel A: Sample	Dividend Increases	No Change	Dividend Decreases	Total
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**

Panel B: Frequency of dividend changes by year

	Dividend Increases		No Change		Dividend Decreases		Total for Year	
	Number	Percent. (%)	Number	Percent. (%)	Number	Percent. (%)	Number	Percent. (%)
1995	3	1.28	2	3.39	0	0.00	5	1.40
1996	24	10.21	1	1.69	4	6.45	29	8.15
1997	30	12.77	3	5.08	7	11.29	40	11.24
1998	35	14.89	4	6.78	5	8.07	44	12.36
1999	29	12.34	9	15.25	8	12.90	46	12.92
2000	54	22.98	8	13.56	10	16.13	72	20.22
2001	27	11.49	28	47.46	20	32.26	75	21.07
2002	33	14.04	4	6.79	8	12.90	45	12.64
Total	**235**	**100.00**	**59**	**100.00**	**62**	**100.00**	**356**	**100.00**

(Continue)

Table 1 - Sample Selection (continued)

UK Sample

Panel A: Sample	Dividend Increases	No Change	Dividend Decreases	Total
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**

Panel B: Frequency of dividend changes by year

	Dividend Increases		No Change		Dividend Decreases		Total for Year	
	Number	Percent. (%)	Number	Percent. (%)	Number	Percent. (%)	Number	Percent. (%)
1995	273	10.26	36	10.50	18	6.59	327	9.98
1996	310	11.65	35	10.20	18	6.59	363	11.07
1997	329	12.36	40	11.66	22	8.06	391	11.93
1998	339	12.73	39	11.37	40	14.65	418	12.75
1999	358	13.45	28	8.16	51	18.68	437	13.33
2000	366	13.75	49	14.29	35	12.82	450	13.73
2001	360	13.52	53	15.45	40	14.65	453	13.82
2002	327	12.28	63	18.37	49	17.95	439	13.39
Total	**2,662**	**100.00**	**343**	**100.00**	**273**	**100.00**	**3,278**	**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 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.

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

Coefficient	Pooled OLS		FEM		REM	
Portugal						
Constant	**0.289**	*			0.115	*
	(4.216)				(5.124)	
Earnings	**0.079**	*	0.057	**	0.057	*
	(2.674)		(2.687)		(4.699)	
Lagged Dividends	**0.197**		0.018		0.597	*
	(1.224)		(0.160)		(15.201)	
N	383		383		383	
Adjusted R^2	0.093		0.110		0.002	
Test F	1.14					
Hausman Test			59.66	*		
France						
Constant	0.656	**			0.895	*
	(1.908)				(11.761)	
Earnings	-0.008		**0.046**	***	0.000	
	(-0.172)		**(1.816)**		(0.004)	
Lagged Dividends	0.645	*	**0.060**		0.477	*
	(5.418)		**(0.535)**		(18.527)	
N	978		978		978	
Adjusted R^2	0.560		0.799		0.717	
Test F	9.57	*				
Hausman Test			283.64	*		
UK						
Constant	0.279	*			0.369	*
	(4.154)				(6.242)	
Earnings	0.018	**	**0.012**		0.019	*
	(2.225)		**(1.277)**		(13.211)	
Lagged Dividends	0.997	*	**0.800**	*	0.984	*
	(50.317)		**(11.217)**		(15.580)	
N	3,348		3,348		3,348	
Adjusted R^2	0.938		0.944		0.941	
Test F	1.85	*				
Hausman Test			334.59	*		

* 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

This table reports the abnormal returns for the announcement period and for different event periods. Cumulative abnormal returns based on the CAPM (Panel A) for the dividend events of the French and the UK samples are calculated as follows:

$$CAR_t = \sum_{t=a}^{t=b} (\mathrm{AR}_{\mathrm{i,t}})$$

where CAR_t is the cumulative abnormal return between days a and b. $AR_{i,t}$ is the abnormal return for share i in day t computed as:

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

where $R_{i,t}$ is the return for share i in day t, $R_{f,t}$ is the risk-free rate in day t, $R_{m,t}$ is the market return for day t and β_i is the systematic risk of share i. Market-adjusted buy-and-hold returns (Panel B) 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 C we have the cross-sectional distribution of 3 day abnormal returns for dividend change announcements, based on the BHAR results, common to all the three samples.

Panel A: CAR mean for different periods

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	-0.0014	0.0026	0.0027	0.0091**	0.0078*
		(-0.497)	(0.779)	(1.097)	(2.261)	(2.996)
Non-Changes	N = 59	0.0146**	0.0120**	0.0034	0.0226**	0.0045
		(2.009)	(2.417)	(0.723)	(2.333)	(0.941)
Decreases	N = 62	0.0089***	-0.0030	-0.0032	0.0003	-0.0055
		(1.702)	(-0.392)	(-0.470)	(0.027)	(-1.385)

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	0.0049*	0.0199*	0.0168*	0.0256*	0.0039*
		(5.165)	(11.275)	(10.493)	(11.980)	(3.874)
DIED	N = 731	0.0030***	0.0218*	0.0181*	0.0248*	0.0037**
		(1.778)	(7.249)	(6.451)	(7.036)	(2.078)
DNCEI	N = 141	0.0010	0.0319*	0.0275*	0.0372*	0.0087***
		(0.279)	(4.405)	(4.370)	(3.998)	(1.694)
DNCED	N= 202	0.0018	0.0261*	0.0217*	0.0239*	0.0004
		(0.540)	(4.483)	(3.868)	(3.367)	(0.114)
DDEI	N= 108	0.0004	0.0185**	0.0202*	0.0209**	0.0003
		(0.082)	(2.390)	(2.815)	(2.222)	(0.064)
DDED	N= 165	0.0126*	0.0228*	0.0200*	0.0333*	0.0008
		(3.157)	(3.256)	(3.145)	(3.665)	(0.173)

(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: 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 C - 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 C - 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.

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

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

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

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% 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 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.

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

Portugal

Coefficient	**Pooled OLS**		**FEM**		**REM**
			τ = 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	*	
			τ = 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
		$\tau = 1$	
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 *	
		$\tau = 2$	
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
		$\tau = 1$	
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 *	
		$\tau = 2$	
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 regression results were 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.

Panel A:

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

Portugal

Coefficient	Pooled OLS		FEM		REM	
			τ = 1			
Constant	0.011	*			0.038	*
	(3.071)				(4.558)	
DI x $\Delta D_{i,0}$	-0.028	*	**-0.015**	*	-0.019	***
	(-13.430)		**(-2.656)**		(-1.823)	
DD x $\Delta D_{i,0}$	-0.015		**-0.013**		-0.016	
	(-0.766)		**(-0.801)**		(-0.592)	
$ROA_{i,\tau-1}$	-0.233	*	**-0.651**	*	-0.507	*
	(-6.404)		**(-8.096)**		(-10.011)	
$ROA_{i,0}$-$ROA_{i,-1}$	-0.062		**0.132**	***	0.061	
	(-0.922)		**(1.764)**		(1.169)	
N	364		364		364	
Adjusted R^2	0.163		0.323		0.466	
Test F	2.02	*				
Hausman Test			33.73	*		
			τ = 2			
Constant	0.010	*			0.030	*
	(3.037)				(4.347)	
DI x $\Delta D_{i,0}$	-0.038		**-0.014**		-0.024	
	(-1.116)		**(-0.436)**		(-0.588)	
DD x $\Delta D_{i,0}$	-0.016		**-0.032**		-0.027	
	(-0.685)		**(-1.297)**		(-0.944)	
$ROA_{i,\tau-1}$	-0.213	*	**-0.597**	*	-0.441	*
	(-5.996)		**(-8.525)**		(-9.605)	
$ROA_{i,0}$-$ROA_{i,-1}$	-0.052		**-0.007**		-0.037	
	(-0.897)		**(-0.113)**		(-0.739)	
N	347		347		347	
Adjusted R^2	0.114		0.246		0.350	
Test F	1.72	*				
Hausman Test			60.10	*		

(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 A:

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

France						
Coefficient	**Pooled OLS**		**FEM**		**REM**	
			τ = 1			
Constant	0.012	*			0.024	*
	(2.597)				(4.164)	
DI x $\Delta D_{i,0}$	0.032		**-0.036**		-0.007	
	(0.181)		**(-0.218)**		(-0.020)	
DD x $\Delta D_{i,0}$	-0.148	*	**-0.133**		-0.163	
	(-3.687)		**(-0.875)**		(-0.863)	
$ROA_{i,\tau-1}$	-0.335	*	**-0.934**	*	-0.545	*
	(-4.319)		**(-5.435)**		(-7.107)	
$ROA_{i,0}$-$ROA_{i,-1}$	0.037		**0.223**	*	0.068	
	(0.391)		**(2.973)**		(1.027)	
N	310		310		310	
Adjusted R^2	0.130		0.274		0.445	
Test F	1.66*					
Hausman Test			32.72	*		
			τ = 2			
Constant	0.020	*			0.040	*
	(2.763)				(6.303)	
DI x $\Delta D_{i,0}$	0.251		**0.098**		0.110	
	(1.405)		**(0.982)**		(0.352)	
DD x $\Delta D_{i,0}$	-0.117		**-0.239**	***	-0.209	
	(-0.595)		**(-1.918)**		(-0.891)	
$ROA_{i,\tau-1}$	-0.497	*	**-1.046**	*	-0.871	*
	(-4.501)		**(-6.671)**		(-12.686)	
$ROA_{i,0}$-$ROA_{i,-1}$	0.024		**0.030**		0.030	
	(0.242)		**(0.419)**		(0.498)	
N	235		235		235	
Adjusted R^2	0.229		0.541		0.639	
Test F	2.79	*				
Hausman Test			77.55	*		

(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 A:

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

	UK					
Coefficient	**Pooled OLS**		**FEM**		**REM**	
			τ = 1			
Constant	0.024	*			0.038	*
	(6.920)				(9.927)	
DIEI x $\Delta D_{i,0}$	-0.529		**-0.392**		-0.511	
	(-1.632)		**(-1.255)**		(-1.387)	
DIED x $\Delta D_{i,0}$	-1.154	***	**-1.334**	*	-1.268	*
	(-1.941)		**(-2.643)**		(-2.813)	
DDEI x $\Delta D_{i,0}$	1.311		**-0.203**		0.327	
	(0.929)		**(-1.027)**		(0.980)	
DDED x $\Delta D_{i,0}$	-0.190		**-0.149**		-0.225	
	(-0.962)		**(-0.745)**		(-1.093)	
$ROA_{i,\tau-1}$	-0.405	*	**-0.741**	*	-0.553	*
	(-11.745)		**(-13.905)**		(-21.203)	
$ROA_{i,0}$-$ROA_{i,-1}$	-0.117	*	**-0.001**		-0.082	*
	(-2.851)		**(-0.022)**		(-3.710)	
N	2,809		2,809		2,809	
Adjusted R^2	0.207		0.314		0.412	
Test F	1.86	*				
Hausman Test			258.39	*		
			τ = 2			
Constant	0.033	*			0.048	*
	(5.656)				(11.679)	
DIEI x $\Delta D_{i,0}$	0.529		**-0.096**		0.119	
	(1.099)		**(-0.214)**		(0.259)	
DIED x $\Delta D_{i,0}$	-0.444		**-0.694**		-0.614	
	(-0.890)		**(-1.607)**		(-1.059)	
DDEI x $\Delta D_{i,0}$	-0.528		**0.866**		0.597	
	(-0.362)		**(1.153)**		(1.297)	
DDED x $\Delta D_{i,0}$	0.521	*	**0.165**		0.291	
	(3.219)		**(0.783)**		(1.211)	
$ROA_{i,\tau-1}$	-0.552	*	**-0.813**	*	-0.706	*
	(-8.982)		**(-14.984)**		(-30.964)	
$ROA_{i,0}$-$ROA_{i,-1}$	0.086	**	**0.052**		0.063	*
	(2.328)		**(1.454)**		(3.036)	
N	2,360		2,360		2,360	
Adjusted R^2	0.243		0.365		0.429	
Test F	1.91	*				
Hausman Test			117.45	*		

(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 B:

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

	Portugal					
Coefficient	**Pooled OLS**		**FEM**		**REM**	
			τ = 1			
Constant	-0.704	*			**-0.565**	***
	(-6.575)				**(-1.808)**	
DI x $\Delta D_{i,0}$	0.153	***	-0.057		**-0.046**	
	(1.742)		(-0.523)		**(-0.111)**	
DD x $\Delta D_{i,0}$	-1.018	**	-0.193		**-0.283**	
	(-2.310)		(-0.273)		**(-0.271)**	
$ROE_{i,\tau-1}$	0.129		-1.852	**	**-1.398**	
	(0.195)		(-2.462)		**(-1.567)**	
$ROE_{i,0}$-$ROE_{i,-1}$	2.129		1.386		**1.354**	
	(1.198)		(0.791)		**(0.719)**	
N	364		364		364	
Adjusted R^2	0.005		0.149		0.343	
Test F	1.78	*				
Hausman Test			6.14			
			τ = 2			
Constant	0.012				0.029	**
	(0.998)				(2.011)	
DI x $\Delta D_{i,0}$	0.124		**0.072**		0.089	
	(1.620)		**(1.000)**		(0.776)	
DD x $\Delta D_{i,0}$	-0.022		**0.027**		0.012	
	(-0.481)		**(0.743)**		(0.143)	
$ROE_{i,\tau-1}$	-0.447	*	**-0.816**	*	-0.710	*
	(-3.124)		**(-5.481)**		(-12.270)	
$ROE_{i,0}$-$ROE_{i,-1}$	0.167		**0.033**		0.063	
	(0.794)		**(0.195)**		(0.447)	
N	347		347		347	
Adjusted R^2	0.149		0.283		0.438	
Test F	1.77	*				
Hausman Test			123.77	*		

(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 B:

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

	France					
Coefficient	**Pooled OLS**		**FEM**		**REM**	
			τ = 1			
Constant	0.004				0.018	***
	(0.394)				(1.824)	
DI x $\Delta D_{i,0}$	0.045		**-0.153**		-0.106	
	(0.147)		**(-0.543)**		(-0.178)	
DD x $\Delta D_{i,0}$	-0.106		**-0.245**		-0.224	
	(-1.018)		**(-0.903)**		(-0.640)	
ROE $_{i,\tau-1}$	-0.216		**-0.820**	**	-0.507	*
	(-1.245)		**(-2.121)**		(-3.874)	
ROE $_{i,0}$-ROE $_{i,-1}$	-0.051		**-0.001**		-0.112	
	(-0.202)		**(-0.003)**		(-0.916)	
N	310		310		310	
Adjusted R^2	0.023		0.260		0.375	
Test F	2.07	*				
Hausman Test			45.3	*		
			τ = 2			
Constant	0.016				0.051	*
	(0.851)				(4.426)	
DI x $\Delta D_{i,0}$	0.646		**0.051**		0.101	
	(1.530)		**(0.248)**		(0.195)	
DD x $\Delta D_{i,0}$	0.186		**-0.022**		0.016	
	(1.020)		**(-0.151)**		(0.040)	
ROE $_{i,\tau-1}$	-0.525	***	**-1.353**	*	-1.207	*
	(-1.704)		**(-5.887)**		(-15.023)	
ROE $_{i,0}$-ROE $_{i,-1}$	0.163		**-0.099**		-0.034	
	(1.141)		**(-0.697)**		(-0.404)	
N	235		235		235	
Adjusted R^2	0.136		0.620		0.700	
Test F	4.38	*				
Hausman Test			59.14	*		

(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 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	**Pooled OLS**		**FEM**		**REM**	
			$\tau = 1$			
Constant	0.059	*			0.088	*
	(5.798)				(10.796)	
DIEI x $\Delta D_{i,0}$	-2.591	**	**-2.666**	**	-2.632	**
	(-2.312)		**(-2.559)**		(-2.556)	
DIED x $\Delta D_{i,0}$	-1.825		**-2.471**	**	-2.104	***
	(-1.447)		**(-2.267)**		(-1.668)	
DDEI x $\Delta D_{i,0}$	2.651		**2.836**		2.923	*
	(1.248)		**(1.495)**		(3.124)	
DDED x $\Delta D_{i,0}$	-0.340		**0.242**		-0.131	
	(-0.487)		**(0.350)**		(-0.228)	
$ROE_{i,\tau-1}$	-0.533	*	**-0.975**	*	-0.729	*
	(-9.938)		**(-16.401)**		(-29.187)	
$ROE_{i,0}-ROE_{i,-1}$	-0.048		**0.115**	*	0.013	
	(-1.212)		**(2.766)**		(0.667)	
N	2,817		2,817		2,817	
Adjusted R^2	0.263		0.378		0.390	
Test F	2.01	*				
Hausman Test			85.12	*		
			$\tau = 2$			
Constant	0.045	*			0.085	*
	(4.260)				(6.349)	
DIEI x $\Delta D_{i,0}$	1.573		**-0.454**		-0.005	
	(1.464)		**(-0.472)**		(-0.004)	
DIED x $\Delta D_{i,0}$	-3.017		**-4.803**	**	-4.492	*
	(-1.516)		**(-2.573)**		(-2.819)	
DDEI x $\Delta D_{i,0}$	2.961		**1.758**		1.985	
	(1.466)		**(0.934)**		(1.575)	
DDED x $\Delta D_{i,0}$	0.612		**-0.026**		0.087	
	(0.903)		**(-0.033)**		(0.133)	
$ROE_{i,\tau-1}$	-0.554	*	**-0.881**	*	-0.816	*
	(-11.908)		**(-18.282)**		(-36.344)	
$ROE_{i,0}-ROE_{i,-1}$	-0.020		**-0.007**		-0.008	
	(-0.484)		**(-0.219)**		(-0.451)	
N	2,366		2,366		2,366	
Adjusted R^2	0.223		0.428		0.542	
Test F	2.70	*				
Hausman Test			96.18	*		

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

Portugal						
Coefficient	**Pooled OLS**		**FEM**		**REM**	
			τ = 1			
Constant	0.368	*			0.541	*
	(4.578)				(5.147)	
DI x $\Delta D_{i,0}$	-0.036		**0.066**		0.029	
	(-0.808)		**(1.143)**		(0.145)	
DD x $\Delta D_{i,0}$	0.283		**0.219**		0.257	
	(1.052)		**(0.700)**		(0.518)	
$D/E_{i,\tau-1}$	-0.341	*	**-0.654**	*	-0.524	*
	(-3.198)		**(-3.194)**		(-9.361)	
$D/E_{i,0}$-$D/E_{i,-1}$	-0.056		**0.022**		-0.028	
	(-0.409)		**(0.164)**		(-0.463)	
N	364		364		364	
Adjusted R^2	0.183		0.230		0.354	
Test F	1.26	***				
Hausman Test			63.63	*		
			τ = 2			
Constant	0.401	*			0.680	*
	(3.435)				(7.284)	
DI x $\Delta D_{i,0}$	0.006		**0.306**		0.146	
	(0.009)		**(0.508)**		(0.192)	
DD x $\Delta D_{i,0}$	0.560	*	**0.581**		0.581	
	(3.406)		**(1.549)**		(1.065)	
$D/E_{i,\tau-1}$	-0.345	**	**-0.841**	*	-0.633	*
	(-2.295)		**(-6.481)**		(-13.197)	
$D/E_{i,0}$-$D/E_{i,-1}$	-0.106		**-0.078**		-0.096	***
	(-1.104)		**(-1.006)**		(-1.693)	
N	347		347		347	
Adjusted R^2	0.162		0.397		0.489	
Test F	2.6	*				
Hausman Test			29.75	*		

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

	France					
Coefficient	**Pooled OLS**		**FEM**		**REM**	
	τ = 1					
Constant	-0.081				-0.003	
	(-0.323)				(-0.019)	
DI x $\Delta D_{i,0}$	-2.683		**-4.974**		-2.571	
	(-0.646)		**(-1.212)**		(-0.246)	
DD x $\Delta D_{i,0}$	1.978		**7.437**	**	7.004	
	(0.501)		**(2.306)**		(1.201)	
$D/E_{i,\tau-1}$	0.129		**0.016**		0.080	
	(0.483)		**(0.043)**		(1.070)	
$D/E_{i,0}$-$D/E_{i,-1}$	-0.207		**-0.441**		-0.381	*
	(-0.748)		**(-1.560)**		(-2.868)	
N	310		310		310	
Adjusted R^2	0.003		0.169		0.299	
Test F	1.67	*				
Hausman Test			19.46	*		
	τ = 2					
Constant	**3.955**	**			3.642	*
	(2.294)				(7.662)	
DI x $\Delta D_{i,0}$	**2.786**		-2.138		3.643	
	(0.107)		(-0.809)		(0.059)	
DD x $\Delta D_{i,0}$	**-7.275**		12.363		-7.583	
	(-1.056)		(0.235)		(-1.596)	
$D/E_{i,\tau-1}$	**-3.900**	**	-6.313	*	-3.629	*
	(-2.200)		(-3.703)		(-15.972)	
$D/E_{i,0}$-$D/E_{i,-1}$	**1.053**		2.788		0.817	
	(0.900)		(1.563)		(1.039)	
N	235		235		235	
Adjusted R^2	0.553		0.572		0.519	
Test F	1.12					
Hausman Test			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: $D/E_{i,\tau}$ - $D/E_{i,\tau-1} = \alpha + \beta_1$ DI x $\Delta D_{i,0} + \beta_2$ DD x $\Delta D_{i,0} + \beta_3$ $D/E_{i,\tau-1} + \beta_4$ ($D/E_{i,0}$ - $D/E_{i,-1}$) + $\varepsilon_{i,t}$						
			UK			
Coefficient	**Pooled OLS**		**FEM**		**REM**	
			τ = 1			
Constant	0.003	*			0.003	*
	(24.406)				(18.626)	
DIEI x $\Delta D_{i,0}$	-0.191	*	**-0.252**	*	-0.228	*
	(-5.273)		**(-6.569)**		(-10.129)	
DIED x $\Delta D_{i,0}$	0.051	*	**0.078**	*	0.067	*
	(4.088)		**(3.342)**		(3.957)	
DDEI x $\Delta D_{i,0}$	0.044	*	**0.082**	*	0.068	*
	(4.297)		**(4.779)**		(6.556)	
DDED x $\Delta D_{i,0}$	-0.000		**-0.000**		-0.000	
	(-0.325)		**(-0.587)**		(-0.599)	
$DE_{i,\tau-1}$	-0.001	***	**-0.001**		-0.001	
	(-1.736)		**(-0.650)**		(-1.389)	
$DE_{i,0}$-$DE_{i,-1}$	0.000		**0.000**		0.000	
	(1.192)		**(0.053)**		(0.479)	
N	2,797		2,797		2,797	
Adjusted R^2	0.032		0.149		0.276	
Test F	2.57	*				
Hausman Test			46.52	*		
			τ = 2			
Constant	0.212	*			0.259	*
	(7.122)				(13.011)	
DIEI x $\Delta D_{i,0}$	0.222		**1.444**		0.521	
	(0.086)		**(0.573)**		(0.172)	
DIED x $\Delta D_{i,0}$	3.050		**1.724**		3.069	
	(0.991)		**(0.541)**		(0.805)	
DDEI x $\Delta D_{i,0}$	-1.764		**-4.763**		-2.374	
	(-0.854)		**(-1.185)**		(-0.779)	
DDED x $\Delta D_{i,0}$	-0.268		**-0.753**		-0.457	
	(-0.164)		**(-0.552)**		(-0.286)	
$DE_{i,\tau-1}$	-0.339	*	**-0.747**	*	-0.434	*
	(-6.938)		**(-9.246)**		(-22.938)	
$DE_{i,0}$-$DE_{i,-1}$	-0.098	***	**-0.086**		-0.102	*
	(-1.653)		**(-1.608)**		(-5.447)	
N	2,350		2,350		2,350	
Adjusted R^2	0.175		0.305		0.316	
Test F	1.89	*				
Hausman Test			19.16	*		

(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:

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

Portugal						
Coefficient	**Pooled OLS**		**FEM**		**REM**	
			τ = 1			
Constant	**1.766**	*			2.195	*
	(4.380)				(3.953)	
DI x $\Delta D_{i,0}$	**-0.322**		0.379		-0.340	
	(-1.084)		(-0.965)		(-0.208)	
DD x $\Delta D_{i,0}$	**3.618**	**	5.927	***	4.888	
	(2.340)		(1.793)		(1.194)	
$WCR_{i,\tau-1}$	**-0.674**	*	-1.067	*	-0.847	*
	(-4.874)		(-9.048)		(-8.225)	
$WCR_{i,0}-WCR_{i,-1}$	**-0.200**		0.065		-0.090	
	(-1.623)		(0.573)		(-0.942)	
N	364		364		364	
Adjusted R^2	0.421		0.369		0.492	
Test F	0.65					
Hausman Test			26.97	*		
			τ = 2			
Constant	**2.106**	*			1.823	*
	(5.598)				(5.724)	
DI x $\Delta D_{i,0}$	**-4.563**	**	-6.701		-3.984	
	(-2.085)		(-1.485)		(-0.666)	
DD x $\Delta D_{i,0}$	**3.100**	*	6.731		1.428	
	(2.785)		(1.600)		(0.324)	
$WCR_{i,\tau-1}$	**-0.868**	*	-1.026	*	-0.775	*
	(-13.704)		(-13.384)		(-15.279)	
$WCR_{i,0}-WCR_{i,-1}$	**0.051**	***	0.004		0.078	
	(1.904)		(0.077)		(1.519)	
N	347		347		347	
Adjusted R^2	0.441		0.371		0.298	
Test F	0.54					
Hausman Test			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:

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

France						
Coefficient	**Pooled OLS**		**FEM**		**REM**	
			τ = 1			
Constant	0.174	*			0.160	*
	(3.643)				(3.677)	
DI x $\Delta D_{i,0}$	1.203		**4.273**	**	0.945	
	(1.093)		**(2.216)**		(0.346)	
DD x $\Delta D_{i,0}$	-3.776		**-8.838**	***	-3.347	
	(-0.872)		**(-1.693)**		(-1.561)	
$WCR_{i,\tau-1}$	-0.160	*	**-0.816**	*	-0.148	*
	(-4.033)		**(-10.294)**		(-4.993)	
$WCR_{i,0}$-$WCR_{i,-1}$	-0.061		**0.045**		-0.048	
	(-0.642)		**(0.696)**		(-0.922)	
N	309		309		309	
Adjusted R^2	0.090		0.195		0.027	
Test F	1.44	**				
Hausman Test			145.71	*		
			τ = 2			
Constant	**0.220**	*			0.303	*
	(3.377)				(4.719)	
DI x $\Delta D_{i,0}$	**-0.686**		-1.595		-1.819	
	(-0.449)		(-0.928)		(-0.612)	
DD x $\Delta D_{i,0}$	**6.288**		0.982		5.586	**
	(1.608)		(0.952)		(2.432)	
$WCR_{i,\tau-1}$	**-0.181**	*	-0.702	*	-0.243	*
	(-3.511)		(-6.343)		(-5.510)	
$WCR_{i,0}$-$WCR_{i,-1}$	**0.020**		-0.067		-0.006	
	(0.273)		(-1.057)		(-0.095)	
N	235		235		235	
Adjusted R^2	0.114		0.177		0.237	
Test F	1.20					
Hausman Test			52.8	*		

(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:

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

UK						
Coefficient	**Pooled OLS**		**FEM**		**REM**	
			τ = 1			
Constant	0.126	*			0.343	*
	(5.595)				(12.998)	
DIEI x $\Delta D_{i,0}$	-1.313		**-1.180**		-1.026	
	(-0.761)		**(-0.698)**		(-0.584)	
DIED x $\Delta D_{i,0}$	-1.218		**-0.714**		-1.319	
	(-0.458)		**(-0.298)**		(-0.599)	
DDEI x $\Delta D_{i,0}$	0.590		**1.041**		0.565	
	(0.724)		**(1.279)**		(0.353)	
DDED x $\Delta D_{i,0}$	-0.128		**-0.341**		0.070	
	(-0.145)		**(-0.423)**		(0.073)	
$WCR_{i,\tau-1}$	-0.092	*	**-0.699**	*	-0.241	*
	(-5.754)		**(-15.937)**		(-15.605)	
$WCR_{i,0}$-$WCR_{i,-1}$	-0.154	*	**0.090**	*	-0.120	*
	(-3.978)		**(2.912)**		(-6.001)	
N	2,625		2,625		2,625	
Adjusted R^2	0.066		0.290		0.303	
Test F	2.73	*				
Hausman Test			56.47	*		
			τ = 2			
Constant	0.117	*			0.303	*
	(4.877)				(11.662)	
DIEI x $\Delta D_{i,0}$	3.907		**3.769**	**	4.250	**
	(1.457)		**(2.018)**		(2.050)	
DIED x $\Delta D_{i,0}$	5.320	**	**4.167**		5.334	***
	(1.996)		**(1.601)**		(1.955)	
DDEI x $\Delta D_{i,0}$	-1.473		**-0.712**		-1.241	
	(-1.348)		**(-0.771)**		(-0.585)	
DDED x $\Delta D_{i,0}$	0.326		**-0.065**		0.356	
	(0.489)		**(-0.080)**		(0.331)	
$WCR_{i,\tau-1}$	-0.099	*	**-0.718**	*	-0.228	*
	(-5.784)		**(-17.473)**		(-15.141)	
$WCR_{i,0}$-$WCR_{i,-1}$	-0.109	*	**-0.028**		-0.108	*
	(-3.250)		**(-1.050)**		(-5.110)	
N	2,204		2,204		2,204	
Adjusted R^2	0.052		0.321		0.292	
Test F	2.87	*				
Hausman Test			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: $CF_{i,\tau} - CF_{i,\tau-1} = \alpha + \beta_1 \, DI \times \Delta D_{i,0} + \beta_2 \, DD \times \Delta D_{i,0} + \beta_3 \, CF_{i,\tau-1} + \beta_4 \, (CF_{i,0} - CF_{i,-1}) + \varepsilon_{i,t}$

Portugal						
Coefficient	**Pooled OLS**		**FEM**		**REM**	
			τ = 1			
Constant	0.004	*			0.008	*
	(3.295)				(3.093)	
DI x $\Delta D_{i,0}$	-0.014	*	**-0.015**	*	-0.015	*
	(-4.089)		**(-4.413)**		(-3.430)	
DD x $\Delta D_{i,0}$	-0.011		**-0.007**		-0.007	
	(-0.869)		**(-0.857)**		(-0.707)	
$CF_{i,\tau-1}$	-0.303	*	**-0.637**	*	-0.525	*
	(-3.786)		**(-3.549)**		(-5.920)	
$CF_{i,0}-CF_{i,-1}$	-0.339	**	**0.186**		0.035	
	(-2.033)		**(1.640)**		(0.389)	
N	364		364		364	
Adjusted R^2	0.365		0.487		0.563	
Test F	2.02	*				
Hausman Test			43.77	*		
			τ = 2			
Constant	**0.005**	*			0.007	*
	(2.761)				(3.636)	
DI x $\Delta D_{i,0}$	**-0.010**		-0.004		-0.008	
	(-0.412)		(-0.223)		(-0.428)	
DD x $\Delta D_{i,0}$	**0.005**		0.002		0.004	
	(0.797)		(0.292)		(0.273)	
$CF_{i,\tau-1}$	**-0.235**	**	-0.546	*	-0.394	*
	(-2.440)		(-3.629)		(-6.668)	
$CF_{i,0}-CF_{i,-1}$	**-0.014**		0.039		0.001	
	(-0.329)		(0.307)		(0.006)	
N	347		347		347	
Adjusted R^2	0.046		0.061		0.194	
Test F	1.06					
Hausman Test			37.47	*		

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

France						
Coefficient	**Pooled OLS**		**FEM**		**REM**	
			τ = 1			
Constant	0.009	***			0.020	*
	(1.884)				(4.927)	
DI x $\Delta D_{i,0}$	0.242	***	**0.144**		0.205	
	(1.741)		**(0.959)**		(0.636)	
DD x $\Delta D_{i,0}$	0.047		**0.037**		0.094	
	(0.657)		**(0.329)**		(0.512)	
$CF_{i,\tau-1}$	-0.317	**	**-1.107**	*	-0.578	*
	(-2.587)		**(-10.713)**		(-12.137)	
$CF_{i,0}-CF_{i,-1}$	-0.075		**0.208**	*	-0.027	
	(-0.422)		**(3.770)**		(-0.541)	
N	310		310		310	
Adjusted R^2	0.214		0.491		0.518	
Test F	2.83	*				
Hausman Test			131.20	*		
			τ = 2			
Constant	0.009	**			0.022	*
	(2.345)				(3.919)	
DI x $\Delta D_{i,0}$	-0.033		**-0.139**		-0.129	
	(-0.136)		**(-0.741)**		(-0.477)	
DD x $\Delta D_{i,0}$	0.005		**0.043**		0.015	
	(0.038)		**(0.549)**		(0.072)	
$CF_{i,\tau-1}$	-0.281	*	**-0.789**	*	-0.607	*
	(-3.462)		**(-6.660)**		(-10.291)	
$CF_{i,0}-CF_{i,-1}$	-0.283	**	**-0.176**		-0.267	*
	(-2.443)		**(-1.106)**		(-4.433)	
N	235		235		235	
Adjusted R^2	0.141		0.515		0.621	
Test F	3.05	*				
Hausman Test			29.52	*		

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

	UK					
Coefficient	**Pooled OLS**		**FEM**		**REM**	
			τ = 1			
Constant	0.015	*			0.041	*
	(7.220)				(13.785)	
DIEI x $\Delta D_{i,0}$	-0.138		**-0.104**		-0.161	
	(-0.673)		**(-0.599)**		(-0.831)	
DIED x $\Delta D_{i,0}$	-0.057		**-0.284**		-0.183	
	(-0.253)		**(-1.615)**		(-0.788)	
DDEI x $\Delta D_{i,0}$	-0.294		**0.047**		-0.015	
	(-1.148)		**(0.543)**		(-0.087)	
DDED x $\Delta D_{i,0}$	0.050		**0.227**	**	0.147	
	(0.456)		**(2.452)**		(1.414)	
$CF_{i,\tau-1}$	-0.182	*	**-0.604**	*	-0.403	*
	(-9.538)		**(-10.453)**		(-20.665)	
$CF_{i,0}-CF_{i,-1}$	-0.100	**	**0.045**		-0.050	**
	(-2.356)		**(0.971)**		(-2.444)	
N	2,759		2,759		2,759	
Adjusted R^2	0.100		0.293		0.351	
Test F	2.47	*				
Hausman Test			29.88	*		
			τ = 2			
Constant	0.020	*			0.054	*
	(4.403)				(16.914)	
DIEI x $\Delta D_{i,0}$	0.114		**0.067**		0.055	
	(0.558)		**(0.349)**		(0.232)	
DIED x $\Delta D_{i,0}$	-0.009		**-0.454**	**	-0.337	
	(-0.032)		**(-2.051)**		(-1.132)	
DDEI x $\Delta D_{i,0}$	-0.220		**-0.016**		-0.063	
	(-0.613)		**(-0.123)**		(-0.271)	
DDED x $\Delta D_{i,0}$	-0.023		**0.077**		0.023	
	(-0.199)		**(0.667)**		(0.187)	
$CF_{i,\tau-1}$	-0.239	*	**-0.718**	*	-0.538	*
	(-6.118)		**(-12.293)**		(-27.629)	
$CF_{i,0}-CF_{i,-1}$	0.070		**0.128**	*	0.094	*
	(1.294)		**(2.769)**		(4.581)	
N	2,306		2,306		2,306	
Adjusted R^2	0.113		0.373		0.419	
Test F	3.00	*				
Hausman Test			35.49	*		

* 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 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 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.

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

Portugal

Coefficient	Pooled OLS		FEM		REM	
Constant	-0.001				-0.003	
	(-0.174)				(-0.363)	
$\Delta DI_{i,0}$	-0.016		**0.018**		0.012	
	(-0.695)		**(1.126)**		(0.343)	
$ROA_{i,0} - ROA_{i,-1}$	-0.062		**-0.325**	**	-0.254	***
	(-0.526)		**(-2.136)**		(-1.717)	
$\Delta ROA_{i,2}$	-0.145	**	**-0254**		-0.217	**
	(-1.926)		**(-2.335)**	**	(-2.090)	
$SG_{i,0} - SG_{i,-1}$	-0.009		**0.005**		0.002	
	(-0.577)		**(0.325)**		(0.216)	
$\Delta SG_{i,2}$	0.000		**0.009**		0.008	
	(0.006)		**(0.821)**		(0.764)	
N	147		147		147	
Adjusted R^2	0.065		0.178		0.429	
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
*** Significantly different from zero at the 10% 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					
Constant	0.006	**			**0.008**	
	(2.037)				**(1.510)**	
$\Delta DI_{i,0}$	-0.425		-0.866	*	**-0.749**	**
	(-1.462)		(-3.908)		**(-2.074)**	
$ROA_{i,0}$ - $ROA_{i,-1}$	-0.007		-0.066		**-0.053**	
	(-0.043)		(-0.321)		**(-0.293)**	
$\Delta ROA_{i,2}$	0.100		0.088		**0.088**	
	(0.820)		(0.555)		**(0.630)**	
$SG_{i,0}$ - $SG_{i,-1}$	-0.033	***	-0.024		**-0.026**	
	(-1.898)		(-1.223)		**(-1.061)**	
$\Delta SG_{i,2}$	-0.019		-0.008		**-0.011**	
	(-1.450)		(-0.575)		**(-0.624)**	
$CE_{i,0}$ - $CE_{i,-1}$	0.625	**	0.768	*	**0.706**	*
	(2.500)		(3.142)		**(3.231)**	
$\Delta CE_{i,2}$	0.447	**	0.581	*	**0.526**	*
	(2.397)		(2.747)		**(2.861)**	
N	173		173		173	
Adjusted R^2	0.056		0.198		0.476	
Test F	1.38	***				
Hausman Test			3.93			

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

Panel B: Dependent Variable - BHAR

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

UK						
Coefficient	**Pooled OLS**		**FEM**		**REM**	
DIEI						
Constant	0.018	*			0.020	*
	(6.009)				(4.947)	
$\Delta DIEI_{i,0}$	0.561		**-0.798**		-0.141	
	(0.911)		**(-1.403)**		(-0.276)	
$ROA_{i,0}$ - $ROA_{i,-1}$	0.155	**	**0.056**		0.096	
	(2.266)		**(0.770)**		(1.588)	
$\Delta ROA_{i,2}$	0.006		**-0.019**		-0.006	
	(0.123)		**(-0.366)**		(-0.141)	
$SG_{i,0}$ - $SG_{i,-1}$	0.007		**0.003**		0.006	
	(1.054)		**(0.234)**		(0.542)	
$\Delta SG_{i,2}$	0.007		**-0.001**		0.004	
	(1.543)		**(-0.018)**		(0.423)	
$CE_{i,0}$ - $CE_{i,-1}$	0.079	**	**0.163**	*	0.090	***
	(1.979)		**(2.832)**		(1.665)	
$\Delta CE_{i,2}$	0.080	**	**0.130**	**	0.092	***
	(1.972)		**(2.413)**		(1.660)	
N	1,327		1,327		1,327	
Adjusted R^2	0.021		0.136		0.313	
Test F	1.42	*				
Hausman Test			15.01	**		
DIED						
Constant	**0.017**	*			0.017	*
	(3.658)				(2.622)	
$\Delta DIED_{i,0}$	**-0.860**		-1.493	**	-1.144	
	(-0.990)		(-2.174)		(-1.579)	
$ROA_{i,0}$ - $ROA_{i,-1}$	**0.020**		0.132		0.082	
	(0.186)		(0.860)		(0.731)	
$\Delta ROA_{i,2}$	**-0.088**		-1.018		-0.047	
	(-1.085)		(-0.199)		(-0.630)	
$SG_{i,0}$ - $SG_{i,-1}$	**0.005**		-0.080	**	-0.043	
	(0.206)		(-2.392)		(-1.447)	
$\Delta SG_{i,2}$	**0.008**		-0.055	**	-0.027	
	(0.447)		(-2.247)		(-1.241)	
$CE_{i,0}$ - $CE_{i,-1}$	**0.143**		0.029		0.058	
	(0.903)		(0.211)		(0.430)	
$\Delta CE_{i,2}$	**0.106**		-0.034		0.015	
	(0.742)		(-0.297)		(0.126)	
N	431		431		431	
Adjusted R^2	0.021		0.019		0.535	
Test F	1.00					
Hausman Test			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