RESEARCH ARTICLE

Corporate social responsibility disclosure, dividend payments and firm value – Relations and mediating effects

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Abstract

We examine the relations between corporate social responsibility (CSR) disclosures, dividend payments and firm value. We use an international sample and measure CSR disclosures based on Global Reporting Initiative (GRI) disclosure levels, which we divide into two parts (unexpected and expected disclosures). We find three main results. First, firms with higher levels of unexpected CSR disclosure pay higher dividends, and this association is attributable to firms where unexpected CSR disclosure is aligned with CSR performance. Second, only the unexpected part of CSR disclosures is positively associated with share prices. Third, this positive association is fully mediated by dividends.

KEYWORDS

corporate social responsibility, dividends, ESG, Global Reporting Initiative, unexpected disclosures

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1 | INTRODUCTION

The fact that the CEO of the largest investment management firm, Black Rock, has made it known that Black Rock expects greater corporate social responsibility (CSR) engagement from the firms they invest in, has placed renewed emphasis on CSR disclosure, which is the primary vehicle for CEOs to inform the market of their CSR activities. Given the renewed interest

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Charl de Villiers, Diandian Ma and Ana Marques contributed equally to the paper.

investors have shown in CSR disclosures, it is an opportune time to consider the impact of CSR disclosures on investors' economic benefits, such as dividends. Therefore, this study examines the relations between CSR disclosures, dividends and firm value. A high level of CSR disclosure positively influences the quality of earnings, reduces cost of capital, enhances firm reputation and firm value, and increases analyst forecast accuracy (Brooks & Oikonomou, 2018; De Villiers & Marques, 2016; Li et al., 2018; Qiu et al., 2016). All of these consequences result in improved liquidity and profitability, which subsequently affect firms' cash pay-out decisions. For example, Oh et al. (2021) document the causal relations between CSR and the management of cash flows from operations, an important determinant of dividend payments.

Moreover, as CSR disclosures (and respective activities) have costs, managers can use a strong dividends policy to justify firms' CSR expenditures and strategy, alleviate shareholders' concerns about overinvestment, and signal to shareholders the financial strength and stability of the firm (Ambarish et al., 1987; Atanassov & Mandell, 2018). As argued by Benlemlih (2019), dividend policies can mitigate agency issues by controlling managers' incentives to overinvest the existing free cash flow in CSR activities, to obtain private benefits (i.e., enhancing their own reputation). This perception of financial strength among market participants and alleviation of agency issues should, in turn, lead to a higher valuation of firm equity. Despite these relations between CSR disclosure, dividends and firm value, the prior literature does not explore these matters in conjunction.[1]

Our paper examines two issues. First, we assess whether CSR disclosure is associated with dividends. Given that CSR disclosure levels differ widely depending on firm characteristics, such as industry, disclosure above or below the expected level may be a more revealing metric to consider. Therefore, following the prior CSR literature (Cahan et al., 2016; Lys et al., 2015), we consider both the expected and unexpected CSR disclosures.[2] Second, if there is an association between CSR disclosures and dividends, we analyse the association between CSR disclosures and stock prices, considering the possible existence of direct and indirect (i.e., mediated by dividends) impacts.

Our sample consists of 326 of the 500 largest European firms from 18 countries. Our focus on Europe is driven by the general acceptance in this jurisdiction of the Global Reporting Initiative (GRI) standards, on which we base our CSR disclosure measure. This setting also allows us to consider prior research, which finds that a large variation in country-level investor protection and transparency influence both firms' financing decisions and corporate social activities (Ioannou & Serafeim, 2012). The sample period, from 2007 to 2013, is dictated by the CSR disclosure measure we use: the third version of the GRI guidelines (GRI G3), which specified three levels of disclosure (C for firms disclosing 10 of the GRI indicators, B for firms disclosing more, and A for firms disclosing all of the GRI indicators), was only applicable during this period.

We initially focus on the association between CSR disclosures and dividend pay-outs. Extending the findings of Lys et al. (2015), who split CSR expenses into their expected and unexpected parts, we consider that investors, as well as other stakeholders, have, over time, developed expectations regarding the level of CSR disclosures. For example, large firms and firms operating in environmentally sensitive industries are both expected to disclose more CSR information (De Villiers & Marques, 2016). Thus, in our tests, we calculate unexpected

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[1]Although the relation between CSR activities and dividends has been studied before (Cheung et al., 2018; De Villiers & Ma, 2017), to the best of our knowledge, no prior study examines the relation between voluntary CSR disclosures and dividends in a setting like ours. Saeed and Zamir (2021) is the only paper we are aware of that studies the association between CSR disclosure and dividends.

[2]Note that CSR performance is not the same as CSR disclosure, as managers can choose the firm's level of CSR disclosure separately from the firm's CSR performance.

CSR disclosures using a model that predicts CSR disclosure (Cahan et al., 2016). We argue that unexpected CSR disclosures are positively associated with firms' dividend pay-outs, but the expected CSR disclosures are not. Our results are consistent with these expectations and this distinction between the expected and unexpected parts of CSR disclosure. To allay endogeneity concerns, we perform propensity score matching and two-stage least squares (2SLS) analyses, as well as analysis based on an exogenous shock that highlight the importance of environmental matters, all of which provide consistent results. Several robustness tests, considering alternative measures for dividends and for CSR disclosures, as well as an alternative method, all yield consistent results. Thus, we conclude that unexpected CSR disclosures lead to higher dividends, because managers understand investors' need to be reassured that resources are not being squandered on CSR.

Given the differences between firms whose CSR disclosure and CSR performance are aligned and those where no alignment exists (Cheng et al., 2015; Guiral et al., 2020), we next hypothesise that the association between unexpected CSR disclosures and dividend pay-outs is dependent on the alignment of unexpected CSR disclosure and CSR performance, i.e. only managers who understand the importance of aligning unexpected CSR disclosure and performance also understand the importance of reassuring investors with dividend pay-outs that resources are not squandered on CSR. To test this we create two subsamples, based on whether unexpected CSR disclosures and CSR performance are above or below the median of those variables. Our analysis shows the result of the full sample analysis is attributable to firms that align their unexpected CSR disclosures with their CSR performance. These firms send consistent signals to the market, including their unexpected CSR disclosures, CSR performance and dividends. On the other hand, in the case of the unaligned subsample, there is no association between unexpected CSR disclosures and dividends.

In the second part of our study, we focus on the association between unexpected CSR disclosures and firm value and use a modified Ohlson model. First, we show that the unexpected CSR disclosures are positively associated with share prices, while the expected CSR disclosures are not. Next, we consider the association between unexpected CSR disclosures and dividend pay-outs that we establish in the first part of our study. We examine the joint effect of unexpected CSR disclosures and dividends on firms' share prices using a structural equation model which allows us to test the existence of mediation effects. The results indicate that the level of unexpected CSR disclosure is positively associated with share prices, but this association is fully mediated by dividends per share. Moreover, dividends per share are positively associated with price. To summarise, the positive effect of unexpected CSR disclosures on share price is not direct but conveyed through dividends. These findings are consistent with the view that unexpected CSR disclosures affect dividends, which in turn affect firm value. This is aligned with our theorisation that managers understand the importance of reassuring investors with dividends that resources are not squandered on CSR.

Our study contributes to the existing literature in several ways. First, we bring a new perspective to the literature, namely that managers use both unexpected CSR disclosure and dividends to signal future prospects, which are positively associated with share prices. Second, unlike the prior literature, focused on the relation between CSR performance (or activities) and dividends, we provide evidence of the association between unexpected CSR disclosures and dividends. This is an important distinction, considering that managers make two separate, but related, CSR decisions: (i) the level of CSR performance to pursue, and (ii) how much information about CSR-related activities to disclose. Unexpected CSR disclosure measures only the second (information) part. Third, our study is the first to document the mediation effect of dividends, via which unexpected CSR disclosures affect firm value. This finding suggests that the prior literature on the financial consequences of CSR disclosure may suffer from an omitted variables problem, and therefore we call on future research to confirm whether previous findings that did not control for dividends can be relied on. Fourth, our study is in an

international context, which is important as prior research findings show a large variation in country-level investor protection and transparency that influence firms' financing decisions and corporate social activities.

Our findings have clear managerial implications, as our results are evidence that managers can develop joint strategies for disclosing CSR information and paying dividends, to optimally influence the market value of shares. Investors will be interested in the relations with firm value we document. Our results should also be of interest to regulators, as they may intervene both on the level of CSR disclosures required and on the level of dividends paid.

2 | LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The disclosure of CSR information is a widespread practice. A recent KPMG report (2020) finds that 80 percent of companies worldwide report on sustainability. CSR disclosures are associated with several financial benefits, including lower analyst forecast errors (Dhaliwal et al., 2012), a reduction of information asymmetry (Cho et al., 2013) and a reduction in the cost of capital (Dhaliwal et al., 2011). Moreover, CSR disclosures can attract institutional investors that want to include in their portfolios firms which they consider aligned with their policies. For example, Pawliczek et al. (2021) analyses the relation between BlackRock and firms on the issue of sustainability reporting, given that BlackRock's CEO has made it known that they expect more CSR engagement from the firms they invest in.

2.1 | The effect of CSR disclosures on dividends

Previous studies that examine the link between CSR activities and financial decisions (Arouri & Pijourlet, 2017; Deng et al., 2013) provide evidence that shareholders' and other stakeholders' interests need not conflict. Nevertheless, CSR activities have costs, potentially transferring firms' resources from shareholders to other stakeholders, because resources spent on CSR could have been distributed to shareholders in the form of dividends or invested in more profitable projects. Huang and Watson (2015) argue that firms use idle resources for CSR activities. Given that these idle resources could potentially be used to pay dividends, investors are more likely to support CSR activities in firms that pay higher dividends. Moreover, as Benlemlih (2019) argues, a strong dividend policy is a way to avoid managers overspending on CSR for the sake of their individual reputation. A stable or increasing dividend pay-out signals to shareholders managers' confidence in firms' future financial performance, reducing information asymmetry (Allen & Michaely, 2003). Thus, dividends play the role of reassuring investors that resources are not being squandered. Managers are aware of this dynamic (Ambarish et al., 1987), and that investors will carefully assess the CSR disclosures made by firms (Pawliczek et al., 2021). This leads us to expect that managers are more likely to pay higher dividends when they make more CSR disclosures.

Prior research generally shows that firms' CSR performance is positively associated with dividends. For example, a recent paper by Benlemlih (2019) finds that in the US, firms with a higher level of CSR activities pay more dividends than firms with a low level of CSR activities. Cheung et al. (2018) states this positive association is because CSR activities themselves are investment projects with positive net present values, which increase earnings and therefore dividends. Further supporting evidence is provided in Rakotomavo (2012) and De Villiers and Ma (2017). However, the relation between CSR disclosure and dividends has not received much attention. In fact, the only paper we are aware of on this topic is from Saeed and Zamir (2021), who focus on CSR disclosures of firms in emerging markets and find that higher CSR

disclosures are associated with lower dividend payments. The authors interpret this negative association as a result of the setting, where dividends and CSR disclosures are substitutes, and shareholders may be eager to quickly reap benefits from their investment.

We focus on CSR disclosure because it signals and reveals incremental information about CSR activities, and reflects both a firm's disclosure credibility and managements' discretionary choice about how much CSR information to share with stakeholders. It is important to consider that investors, as well as other stakeholders, have, over time, developed expectations regarding the level of CSR disclosures based on firms' characteristics (Cahan et al., 2016). For example, large firms and firms operating in environmentally sensitive industries are both expected to disclose more CSR information (De Villiers & Marques, 2016). Thus, in our analyses, we focus on unexpected CSR disclosures. By doing this, we extend the findings of Lys et al. (2015), who split CSR expenses into their expected and unexpected parts. We argue that unexpected CSR disclosures are positively associated with dividends, because they enhance the ability to pay dividends. Both higher unexpected CSR disclosure and dividends send consistently positive signals to the market that the firm has a stable, profitable future. We state our first hypothesis as follows:

> **H1.** Unexpected CSR disclosures are positively associated with dividends, when controlling for the expected CSR disclosures.

Recent findings show that the usefulness of CSR disclosures depends on whether these disclosures are aligned with the strategy or core activities of the firm (Cheng et al., 2015; Guiral et al., 2020). Firms' CSR performance provides an indication of firms' CSR-related strategy. Therefore, considering whether firms' CSR disclosures and CSR performance are aligned can bring new insights into other CSR-related relationships. Firms with aligned CSR disclosures disclose more (less) CSR information if they have better (worse) CSR performance. Aligned CSR disclosures are consistent with agency-related voluntary disclosure theory, which posits that managers are more likely to disclose matters that reflect positively on their firms (such as good CSR performance), and thus by extension on themselves. By contrast, firms with unaligned CSR disclosures respond to worse (better) CSR performance with more (less) CSR disclosures. De Villiers and Van Staden (2011) theorise, and find results supporting the idea, that managers of firms with bad environmental performance (a component of CSR performance) use increased CSR disclosures to explain their environment-related management procedures to the providers of capital, with the aim of providing enough information that will allow them to adjust their environment-related risk assessment of the firm downwards. In cases where better CSR performance is accompanied by less CSR disclosure, this would indicate that management regards CSR-related matters as less important and/or not worthy of disclosure – i.e., in these managers' view, CSR disclosures are not important or beneficial for the firm.

Overall, bearing in mind that the market can observe CSR disclosures and, through the environmental, social and corporate governance (ESG) information provided by databases such as Bloomberg and Asset4, CSR performance as well, firms with aligned CSR performance and disclosures are sending consistent signals to the market (de Villiers et al., 2022). Therefore, taking into account that our first hypothesis relied on the consistency of signals between CSR disclosure and dividends, we argue that the positive association between unexpected CSR disclosure and dividends, if present, should be stronger in firms that send consistent signals regarding CSR (i.e., firms with aligned CSR disclosures and performance). We state our second hypothesis as follows:

> **H2.** The association between unexpected CSR disclosures and dividend pay-outs is stronger in firms whose unexpected CSR disclosures are aligned with their CSR performance, when controlling for the expected CSR disclosures.

2.2 | The effect of dividends and CSR disclosure on share prices

CSR disclosure plays an important role in investor confidence, firm reputation and firm value (McBarnet, 2005). Managers can influence investors' perception of a firm's financial prospects, among other ways, by CSR disclosures, motivating investors to reassess the firm's expected cash flows and risk profile (Healy & Palepu, 2001). CSR disclosures have been found to be positively associated with share prices (De Villiers & Marques, 2016; Schadewitz & Niskala, 2010). However, none of these studies uses the unexpected portion of CSR disclosures, as we do. This unexpected portion of CSR disclosures should be positively valued by capital markets, similarly to the positive reaction earnings surprises have, as market participants recognise the future financial benefits of this information. Thus, we state our third hypothesis as follows:

> **H3.** Unexpected CSR disclosures are positively associated with share prices, when controlling for the expected CSR disclosures.

If our first and third hypotheses are supported, it is necessary to jointly consider the effect of unexpected CSR disclosures on dividends and share prices. None of the prior studies analysed the three variables simultaneously. On the one hand, unexpected CSR disclosures and dividends are regarded as pre-tax expenses and after-tax expenses, respectively, and compete for resources; on the other hand, they are regarded as investments for financial benefits and shareholder relationships on a longer and sustainable horizon. While it is possible that both unexpected CSR disclosures and dividend payments have direct effects on share prices, it is also possible there is an indirect effect, where dividends affect firm value and mediate the effect of unexpected CSR disclosures on firm value. The presence of this mediating effect would establish the existence of a potential causal relation between the variables, providing evidence that unexpected CSR disclosures influence dividends, and, in a second step, those dividends influence firm value. Given that there are no previous studies on this joint effect on share prices, we state our fourth hypothesis in the null form, as follows:

> **H4.** The association between unexpected CSR disclosures and share prices is not mediated by dividends.

3 | RESEARCH DESIGN

3.1 | Sample

Our sample is identified via the Financial Times 2010 classification of the 500 largest European firms. These firms are economically important for Europe, and operate in different countries, where they are faced with diverse institutional settings. To focus only on industrial firms, we remove 73 financial firms from our sample. We obtain financial data from Datastream, losing 61 firms due to incomplete information, and a further 40 firms due to incomplete ESG data from Bloomberg and negative income.[3] Our final sample includes 326 firms. The hand collection of information on the level of GRI information disclosed by firms starts with the examination of the CSR reports the firms issued during the seven-year period we analyse: 2007–2013. In the cases where we cannot find this report, we inspect the annual report of the firm. Our first step is always to determine if the firm discloses a GRI score. If that is the case, we also collect the level of the

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[3]Negative income renders one of our key variables, *DIV/NI*, essentially meaningless.

firm's GRI compliance (A, B or C). We are able to collect this information for 1641 observations, which make up our final sample.

3.2 | The association between CSR disclosures and dividends

With our first hypothesis we aim to ascertain whether there is a positive association between unexpected CSR disclosures and firms' dividend pay-outs. To test this, we estimate the following model:

$$
\begin{aligned}
Dividend\ pay-outs = {}& \alpha_0 + \alpha_1 Unexp\_CSR\_Discl + \alpha_2 Expected\_CSR\_Discl + \\
& \alpha_3 Firm\ level\ variables + \alpha_4 Industry\ level\ variables + \\
& \alpha_5 Country\ institutional\ variables + \alpha_6 Year\ Indicators + \varepsilon
\end{aligned}
\tag{1}
$$

3.2.1 | Dividend pay-outs

We measure dividend pay-outs (*DIV/NI*) as dividends divided by net income, where net income is the net income before extraordinary items, preferred dividends and common dividends. We use the dividend pay-out ratio because it contains more information than a dividend dummy variable, as it considers not only firms' dividend pay-out propensity (i.e., whether they pay or do not pay), but also the size of dividend pay-outs.[4] We obtain dividend and all other financial data from Datastream.

3.2.2 | CSR disclosure

We use a firm's GRI disclosure level as a starting point to measure unexpected CSR disclosure. The GRI Sustainability Reporting Standard has been globally used as a CSR disclosure standard since its inception and is most often used by firms in Europe (KPMG, 2017). Following the GRI-G3 reporting guidelines, we classify firms' CSR disclosures into seven categories. Firms choosing to disclose their CSR performance using this framework could do so at three levels: A (the highest level), B (mid-level) or C (the lowest level). When these disclosure levels are externally assessed, we add a plus sign '+' to the level. We assign A+, B+ and C+ a *CSR_Discl* value of 7, 5 and 3, respectively. For A-level, B-level and C-level, we assign to *CSR_Discl* a value of 6, 4 and 2, respectively. Zero is used when no GRI disclosure level is declared.

The unexpected CSR disclosure (*Unexp_CSR_Discl*) is the difference between the actual CSR disclosure and the expected CSR disclosure (*Expected_CSR_Discl*), which we include in the model as a control variable. *Unexp_CSR_Discl* is calculated as the error term from the ordered logi regression in Equation (2), in which we control for CSR performance (measured via Bloomberg's ESG score), firm, industry and country institutional characteristics, and year fixed effects.[5] We use clustering of errors, to address heteroscedasticity and correlated error terms.

$$
\begin{aligned}
CSR\_Discl = {}& \alpha_0 + \alpha_1 CSR\_Perf + \alpha_2 Firm\ level\ variables + \alpha_3 Industry\ level\ variables + \\
& \alpha_4 Country\ institutional\ variables + \alpha_5 Year\ Indicators + \varepsilon
\end{aligned}
\tag{2}
$$

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[4]As dividend yield (dividends divided by market value of equity) is a key indicator that investors use to assess the value of a share, we also test the association between CSR disclosure and dividend yield in robustness tests. We exclude observations where *DIV/NI* is negative.

[5]We control for CSR performance when we calculate the unexpected CSR disclosure because firms' CSR performance forms the basis of, and has a significant effect on, their CSR disclosures. Managers can strategically choose the level of CSR disclosure depending on firms' CSR performance.

3.2.3 | Control variables

As previous studies suggest that there is a large variation in country-level investor protection and transparency (La Porta et al., 2000), we consider six country-level variables. These variables capture the effect of investor protection, individual freedom of expression and societal concerns that might influence investors' expectations and firm's dividend policies: (1) *AntiSelf* measures anti-self-dealing, which reflects legal protection of minority shareholders; (2) *Voice* is a proxy for citizens' ability to choose their own government and voice their opinions; (3) *Gov_Eff* measures public service and policy quality and effectiveness; (4) *Reg_Qual* is a regulatory quality measurement; (5) *Env_Perf* measures how strongly countries pursue environmental policy goals; (6) *Press* measures the level of press freedom. Given high levels of correlation among these variables, two country-level factors (*PRIN1* and *PRIN2*) are created, using principal component analysis.

Given that industry is an important determinant of CSR disclosure, we use two industry indicator variables to control for industry-level effects. *Ind_Sens* is an indicator variable coded as one when the firm operates in an environmentally sensitive sector, and zero otherwise; *Utility* is an indicator variable coded as one if the firm operates in the sectors of electricity, gas and wastewater, and zero otherwise.[6]

The firm-level controls included in Model (1) are net cash flow from operating activities (*CFO*), profitability (*ROA* – return on assets), necessity of supplementary finance (*Fin*), book-to-market ratio (*B_M*), level of internationalisation (*Internat*), risk (*Volat*), level of recent property, plant and equipment (*New*), capital expenditures (*Capex*), firm size (*Size*) and leverage (*Lev*). Indicator variables for all years (except the first) are included in our estimations to consider possible time effects. We use clustering of errors, to address heteroscedasticity and correlated error terms. Appendix 1 provides a detailed description of all variables.

3.2.4 | Identifying firms with aligned/unaligned unexpected CSR disclosure and performance

To test H2 and H4, we partition our sample using medians for both *Unexp_CSR_Discl* and *CSR_Perf*. This leads to the distribution of our observations into four quadrants. Aligned firm-years are those in the high/high and low/low quadrants, while unaligned firm-years are those in the high/low and low/high quadrants.

3.3 | Research design: The association among CSR disclosures and dividends and share prices

To test our hypotheses on the association among unexpected CSR disclosures, dividends and share prices, we follow prior studies and use a modified Ohlson (1995) model to test whether CSR disclosures have value relevance. This model is based on the premise that book value per share and share price are the accounting items that better explain the cross-sectional variation in share prices. The variables of interest we include in our model are the unexpected CSR disclosure and the dividend pay-outs. To test H3 we use the following model:

$$
\begin{aligned}
\textit{Share Price} = {} & \beta_0 + \beta_1 \textit{Unexp\_CSR\_Discl} + \beta_2 \textit{Expected\_CSR\_Discl} + \beta_3 \textit{BVPS} + \\
& \beta_4 \textit{EPS (excl Div)} + \beta_5 \textit{Firm level variables} + \beta_6 \textit{Industry level variables} + \\
& \beta_7 \textit{Country institutional variables} + \beta_8 \textit{Year Indicators} + \zeta
\end{aligned}
\tag{3}
$$

[6]The industries we consider environmentally sensitive are: (i) forestry, (ii) metals mining, (iii) coal mining, (iv) oil and gas exploration, (v) paper and pulp, (vi) chemicals, (vii) pharmaceuticals and plastics and (viii) iron and steel.

To assess the existence of a mediating effect for dividends per share (*DPS*), we use a structural equations model, as follows:

$$
\begin{aligned}
Mediator\ (DPS) = & \theta_0 + \theta_1 Unexp\_CSR\_Discl + \theta_2 Expected\_CSR\_Discl + \theta_3 BVPS + \\
& \theta_4 EPS\ (excl\ Div) + \theta_5 Firm\ level\ variables + \theta_6 Industry\ level\ variables + \\
& \theta_7 Country\ institutional\ variables + \theta_8 Year\ Indicators + \delta
\end{aligned}
\tag{4}
$$

$$
\begin{aligned}
Share\ Price = & \varphi_0 + \varphi_1 Unexp\_CSR\_Discl + \varphi_2 Expected\_CSR\_Discl + \varphi_3 Mediator\ (DPS) + \\
& \varphi_4 BVPS + \varphi_5 EPS\ (excl\ Div) + + \varphi_6 Firm\ level\ variables + \varphi_7 Industry\ level\ variables + \\
& \varphi_8 Country\ institutional\ variables + \varphi_9 Year\ Indicators + \tau
\end{aligned}
\tag{5}
$$

In these equations, (i) *Share Price* is the closing market value per share, adjusted for stock splits and dividend payments during the year, 90 days after the fiscal year-end; (ii) *BVPS* stands for the book value per share; (iii) *EPS (excl Div)* stands for earnings per share minus dividends per share; and (iv) *DPS* is the dividend per share. The division of EPS (into the retained earnings and dividend parts) serves to isolate the effect of each of the parts with the share price.

Differently from an interaction effect, the mediation effect implies a causal sequence among our variables of interest (MacKinnon & Dwyer, 1993). This is important for us, as we want to test whether the *Unexp_CSR_Discl* influences *Dividends per share*, and *Dividends per share* influences *Share Price*. We use the Sobel–Goodman test to examine the mediation effect. If θ_1 and φ_3 are significant, while φ_1 is insignificant, in Equations (4) and (5), then the mediator (*DPS*), has a full mediation effect. In our scenario, this would mean the influence of unexpected CSR disclosure on share price is indirect and fully mediated by dividend per share. However, if θ_1 and φ_3 are significant and φ_1 is also significant, then dividend per share has a partial mediation effect, meaning that unexpected CSR disclosure has both a direct and an indirect influence on share price. The remaining variables are as defined before.

4 | EMPIRICAL RESULTS AND DISCUSSION

4.1 | Descriptive statistics

Table 1, Panel A presents descriptive statistics for our CSR disclosure measure and dividend pay-out ratio, by country, while Panel B provides more detailed information on CSR disclosures, and Panel C presents general descriptive statistics for all variables. Our sample includes firms with headquarters in 18 European countries (Panel A), the minimum number of observations in a country is 12 (for Poland), and the country with most observations is the UK (457), followed by France (223) and Germany (202). The number of firms also varies greatly across countries, as our sample includes 83 firms from the UK, but only three from Austria and Portugal. In terms of the mean values of *CSR_Discl*, Ireland is the only country with a value below one (0.82), and Spain is the highest (6.06). Panel A also shows that the mean of the dividend pay-out ratio (*DIV/NI*), ranges from 22.80% (Denmark) to 81.53 percent (Finland).

Notice that Ireland, with the lowest mean of *CSR_Discl*, has the second lowest mean of *DIV/NI*, whereas Finland, with the second highest mean of *CSR_Discl*, has the highest mean of *DIV/NI*. This suggests a positive correlation between the two variables. Our data for dividend pay-out is substantially different from Cheung et al. (2018), who report that a substantial proportion of their US-based observations do not pay dividends, whereas only 9.9 percent of our European observations do not pay dividends.

Panel B of Table 1 shows descriptive statistics for several CSR disclosure measures. *CSR_Discl* is as defined in the methods section. *CSR_Discl4* takes the values of 4 (A-rated), 3 (B-rated), 2 (C-rated) and 0, whether the GRI disclosure level was confirmed by external parties

TABLE 1 Descriptive statistics.

Panel A: CSR disclosure measures and dividends, by country

Country	Firms	N	%	CSR_Disc1 (mean)	DIV/NI (mean %)
Austria	3	20	1.22	2.20	60.43
Belgium	7	29	1.77	1.97	77.17
Denmark	9	48	2.93	2.46	22.80
Finland	7	34	2.07	4.53	81.53
France	51	223	13.59	1.72	62.14
Germany	41	202	12.31	2.91	69.68
Ireland	4	17	1.04	0.82	29.14
Italy	13	69	4.20	3.52	69.52
Netherland	14	68	4.14	3.76	57.94
Norway	7	33	2.01	3.30	65.01
Poland	4	12	0.73	2.83	56.11
Portugal	3	16	0.98	3.81	54.09
Russia	11	36	2.19	3.67	43.24
Spain	14	81	4.94	6.06	67.02
Sweden	20	118	7.19	3.24	66.67
Switzerland	27	147	8.96	2.42	57.51
Turkey	8	31	1.89	1.23	55.21
UK	83	457	27.85	1.57	60.67
Total	326	1641	100		

Panel B: CSR disclosure – Alternative measures

CSR_Disc1	Frequency (%)	CSR_Disc4	Frequency (%)	CSR_Disc2	Frequency (%)	CSR_DiscIDV	Frequency (%)
7	333 (20.29)	4	375 (22.85)	1	675 (41.13)	1	778 (47.40)
6	42 (2.56)	3	300 (18.27)	0	966 (58.87)	0	863 (52.60)
5	163 (9.93)	2	103 (6.28)				

TABLE 1 (Continued)

CSR_Discl	Frequency (%)	CSR_Discl4	Frequency (%)	CSR_Discl2	Frequency (%)	CSR_DiscIDV	Frequency (%)
4	137 (8.35)	0	863 (52.60)				
3	26 (1.58)						
2	77 (4.69)						
0	863 (52.60)						
Total	1641 (100)		1641 (100)		1641 (100)		1641 (100)

Panel C: Remaining variables

Variables	Obs.	Mean	Std. dev.	Min.	Max	25th	75th
Main variables							
DIVINI	1641	0.56	0.66	0.00	4.70	0.26	0.62
CSR disclosure	1641	2.55	2.92	0.00	7.00	0.00	5.00
Expected CSR disclosure	1641	2.55	1.96	−2.19	6.23	1.09	4.07
Unexpected CSR disclosure	1641	0.00	2.12	−4.74	4.32	−1.51	1.60
Country-level controls							
AntiSelf	1641	0.44	0.16	0.00	0.76	0.33	0.64
Voice	1641	0.81	0.87	−0.55	1.76	−0.47	1.52
Gov_Eff	1641	0.92	1.00	−0.57	2.36	−0.41	1.79
Reg_Qual	1641	0.95	0.78	−0.25	1.92	−0.14	1.58
Env_Perf	1641	75.38	11.29	0.00	95.50	70.03	83.00
Press	1641	7.37	12.46	−10.00	70.00	2.25	9.75
Firm-level controls							
ROA	1641	0.07	0.05	−0.03	0.30	0.03	0.09
B_M	1641	0.57	0.41	0.05	2.46	0.29	0.76
Lev	1641	0.59	0.16	0.11	0.91	0.50	0.70
Internat	1641	62.00	31.34	0.00	110.20	41.78	87.68
Volat	1641	25.54	7.47	12.76	51.02	20.07	29.96

TABLE 1 (Continued)

Variables	Obs.	Mean	Std. dev.	Min.	Max	25th	75th
New	1641	0.50	0.13	0.21	0.88	0.40	0.59
Capex	1641	0.08	0.09	0.00	0.57	0.03	0.09
CFO	1641	13.79	1.26	6.61	17.37	12.83	14.62
Size	1641	16.15	1.27	12.65	19.58	15.19	16.71
Ind_Sens	1641	0.32	0.47	0.00	1.00	0.00	1.00
Utility	1641	0.07	0.26	0.00	1.00	0.00	0.00
Price-level measures							
Price	1511	49.96	142.54	0.46	1158.17	7.94	38.95
DPS	1511	1.29	3.45	0.00	27.19	0.21	1.12
BPS	1511	18.91	39.88	0.48	308.04	2.97	19.51
EPS	1511	3.03	7.30	−0.82	56.45	0.52	2.76

Note: See Appendix 1 for variable definitions.

or not. *CSR_Discl2* is an indicator variable coded as one when firms disclose GRI with B+ or above, and zero otherwise. *CSR_DisclDV* is an indicator variable coded as one when the firm uses the GRI disclosure framework, and zero otherwise. The results in the *CSR_Discl* column show that more than 20 percent not only disclose at the highest GRI level (A), but also have that disclosure level externally assessed. The *CSR_Discl4* column shows that nearly 23 percent of the observations disclose CSR information at the highest GRI level (A). The *CSR_Discl2* column shows that 41 percent of observations disclose CSR information at the highest GRI disclosure levels (4 and above on the *CSR_Discl* measure). Finally, results in the *CSR_DisclDV* column show that 47 percent of observations disclose CSR information using the GRI guidelines.

Panel C presents the general descriptive statistics for all variables, which are winsorised at the top and bottom 1 percent. Overall, the dividends represent 56 percent of the net income. While our CSR disclosure measure can only vary between 0 and 7, the division of this variable between the expected and unexpected portions of CSR disclosure leads to substantial variation in the resulting variables. As far as possible industry-level effects are concerned, the mean value of *Ind_Sens* indicates that one third of the observations operate in environmentally sensitive industries, and 7 percent of observations are from utility firms.

4.2 | Correlations and principal component analysis of country variables

Table 2, Panel A shows the correlations between *CSR_Discl* and the country-level variables, revealing that several of the country-level institutional variables are highly correlated.

TABLE 2 Country-level variables: Correlations and principal component analysis.

	CSR_Discl	AntiSelf	Voice	Gov_Eff	Reg_Qual	Env_Perf	Press
Panel A: Correlations between CSR_Discl and country-level variables							
CSR_Discl	1						
AntiSelf	−0.02	1					
Voice	0.20**	0.40***	1				
Gov_Eff	0.16***	0.41***	0.97***	1			
Reg_Qual	0.19***	0.40***	0.98***	0.98***	1		
Env_Perf	−0.13***	0.06***	0.17***	0.19***	0.17***	1	
Press	0.01	−0.00	−0.24***	−0.29***	−0.24***	−0.32***	1
				PRIN1			**PRIN2**
Panel B: Principal components of country-level variables							
AntiSelf				0.281			0.350
Voice				0.533			0.097
Gov_Eff				0.537			0.057
Reg_Qual				0.534			0.097
Env_Perf				0.157			−0.643
Press				−0.197			0.665
Eigenvalue				3.314			1.234
Variance explained (%)				0.552			0.206

Note: Panel A reports the Pearson correlations between *CSR_Discl* and country-level variables. *, ** and ***indicate significance at the 10%, 5% and 1% levels, respectively. *PRIN1* and *PRIN2* in Panel B result from the principal component analysis and are included in regressions to control for country characteristics. See Appendix 1 for variable definitions.

For example, the correlations between *Voice* and *Gov_Eff*, *Voice* and *Reg_Qual*, and *Reg_Qual* and *Gov_Eff* are 97, 98 and 98 percent, respectively (all significant at the 1% confidence level). This suggests a potential multi-collinearity problem, which is confirmed by a variance inflation factors (VIF) analysis. Therefore, we perform a principal component analysis, extracting two uncorrelated principal components with eigenvalues above 1.[7] Panel B of Table 2 provides information about the loadings of the independent variables into these two principal components. Jointly, these factors account for 75.8 percent of the variation in the original variables. The factor loadings reveal that component 1 (*PRIN1*) loads mostly on *Voice*, *Gov_Eff* and *Reg_Qual*, while component 2 (*PRIN2*) loads mostly on *Env_Perf* and *Press*.

Table 3 presents the Pearson correlations. There is a positive and significant correlation between *CSR_Discl* and (i) *DIV/NI*, (ii) *Ind_Sens* and (iii) *Utility*. These correlations are consistent with the evidence from previous studies on the association of CSR disclosures and dividends and confirm the presence of industry-level effects.

4.3 | The association between CSR disclosures and dividend pay-outs – Main results

Panel A of Table 4 shows the results from the estimation of Equation (1) for our full sample. The dependent variable is the dividend pay-out ratio (*DIV/NI*), and the independent variable of interest is unexpected CSR disclosure. The coefficient of unexpected CSR disclosure is positive and statistically significant. This evidence supports H1, which states that unexpected CSR disclosures and dividends are positively related, when controlling for the expected CSR disclosures. Moreover, the estimated coefficient for the expected CSR disclosures is not associated with dividends. Thus, separating the unexpected from the expected CSR disclosures brings us new insights into the relation between CSR disclosures and dividends.

Results also show evidence of the relevance of firm and industry characteristics, as there are negative associations between dividend pay-outs and (i) *ROA* and (ii) *New*, and a positive association between dividend pay-outs and *Utility*.[8] The negative relation between dividends and *ROA* is consistent with the prior literature (Atanassov & Mandell, 2018). The relation with *New* is expected, as more mature firms tend to pay higher dividends and have older assets.

To test H2, we partition our sample using both *Unexp_CSR_Discl* and *CSR_Perf* along two axes, distributing the sample into four quadrants. Aligned firm-years are those in the high/ high and low/low quadrants, while unaligned firm-years are those in the high/low and low/ high quadrants. Table 4, Panel B shows that unexpected CSR disclosure is positively associated with dividend pay-outs in the subsample of *Aligned Reporting*, while this association is not significant in the subsample of *Unaligned Reporting*. These findings indicate that the subset of observations with *Aligned Reporting* are responsible for the relation between unexpected CSR disclosure and dividends in the full sample. These firms appear to send consistent signals to the market through their CSR disclosure, CSR performance and dividend pay-outs. As in

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[7]After including the six country-level variables into the regression, the mean VIF is 66.21, which indicates a serious multicollinearity problem. OLS regressions with the principal components included yield VIFs between 1.68 and 1.62.

[8]We re-estimate our main results using the 3-digit standard industry code to control for industry-level effects. Untabulated results are consistent with the results in Table 4, and the estimated coefficient for the unexpected CSR disclosures is positive (0.017) and statistically significant.

TABLE 3 Correlations between *CSR_Discl* and firm-level variables.

	1	2	3	4	5	6	7	8	9
1 *CSR_Discl*	1								
2 *DIV/NI*	0.05**	1							
3 *ROA*	0.00	−0.21***	1						
4 *Fin*	0.11***	0.03	−0.10***	1					
5 *B_M*	0.10***	0.05**	−0.49***	0.06**	1				
6 *Lev*	−0.02	0.13***	−0.39***	0.10***	−0.05	1			
7 *Internat*	0.12***	−0.06**	−0.03	0.00	−0.05	−0.18***	1		
8 *Volat*	−0.10***	−0.07***	−0.07***	−0.10***	0.23***	−0.10***	0.07***	1	
9 *New*	−0.02	−0.06**	0.03	0.07***	0.04	−0.05	−0.14***	−0.00	1
10 *Capex*	0.19***	−0.00	−0.04	0.11***	0.03	0.04*	−0.15***	−0.09***	0.37***
11 *CFO*	0.45***	0.03	−0.06**	0.25***	0.20***	0.036	0.07***	−0.26***	0.06**
12 *Size*	0.45***	−0.02	0.15***	0.23***	−0.11***	−0.12***	0.17***	−0.34***	0.08***
13 *Ind_Sens*	0.30***	−0.00	−0.00	0.10***	0.12***	−0.13***	0.01	−0.07***	0.18***
14 *Utility*	0.16***	0.09***	−0.16***	0.10***	0.12***	0.21***	−0.29***	−0.23***	0.25***
15 *Price*	−0.01	−0.01	0.08***	−0.03	−0.07***	−0.14***	0.06**	−0.10***	−0.06**
16 *DPS*	0.04	0.01	0.10***	−0.02	−0.06***	−0.11***	0.02	−0.13***	−0.08***
17 *BVPS*	0.01	−0.04	−0.04	0.02	0.10***	−0.13***	0.08***	−0.06***	−0.04*
18 *EPS*	0.02	−0.08***	0.12***	0.02	−0.03	−0.12***	0.04	−0.08***	−0.06**

	10	11	12	13	14	15	16	17	18
10 *Capex*	1								
11 *CFO*	0.18***	1							
12 *Size*	0.11***	0.85**	1						
13 *Ind_Sens*	0.25***	0.26***	0.24***	1					
14 *Utility*	0.39***	0.18***	0.11***	0.41***	1				
15 *Price*	−0.02	0.01	0.06**	−0.02	−0.07***	1			

(Continues)

TABLE 3 (Continued)

	10	11	12	13	14	15	16	17	18
16 *DPS*	−0.00	0.06**	0.09***	0.01	−0.04*	0.95***	1		
17 *BVPS*	−0.02	0.08***	0.09	0.03	−0.07***	0.92***	0.89***	1	
18 *EPS*	−0.00	0.08***	0.11	−0.00	−0.07**	0.94***	0.95***	0.91***	1

Note: This table reports the Pearson correlations between *CSR_Discl* and country-level variables. *, ** and ***indicate significance at the 10%, 5% and 1% levels, respectively. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) See Appendix 1 for variable definitions.

Panel A, the coefficients estimated for the expected part of CSR disclosures are not statistically significant.

4.4 | The association between CSR disclosures and dividend pay-outs – Robustness tests

We test the robustness of our results by using alternative measures for CSR disclosure. First, we calculate the unexpected CSR disclosure as the difference between the firm level CSR disclosure and the industry-year CSR median disclosure. The results, considering three alternative measures for dividends, presented in Panel A of Table 5, are consistent with those in Table 4. Second, we use four measures of the level of CSR disclosure as alternative proxies to unexpected CSR disclosure, namely *CSR_DisclDV*, *CSR_Discl2*, *CSR_Discl4* and *CSR_Discl* (see Panel B of Table 1). In these tests, we do not separate the unexpected from the expected parts of CSR disclosure, and thus these results can be compared with previous studies. Panel B of Table 5 shows that all our CSR level variables have positive and statistically significant estimated coefficients, which is consistent with prior findings. As we show in Table 4, this positive coefficient is due to the unexpected part of CSR disclosures.

Investors may have developed expectations regarding the level of dividend pay-outs. Andres and Hofbaur (2017) document a persistent pattern of dividend increases, and that market participants create expectations about future dividends. Thus, we test the robustness of our main results by using as dependent variable *Unexpected dividends* (calculated as a firm's dividend pay-outs minus the industry-year median dividend pay-outs, based on 3-digit SIC codes). Panel A of Table 6 presents the results for the full sample. We find that unexpected CSR disclosures are positively and significantly associated with the unexpected dividend pay-outs. These results support H1. We also analyse the two subsamples based on alignment – untabulated results provide consistent findings.

Next, we consider other alternative proxies for dividends: (i) the dividend yield ratio, which is widely used by practitioners and academics (Faccio et al., 2001), defined as dividends paid to the common shareholders divided by the market value of equity, (ii) dividends paid to the common shareholders divided by total assets (Shao et al., 2010), (iii) the dividend coverage ratio, defined as the dividends paid to the common shareholders divided by net operating cash flow (Faccio et al., 2001), and (iv) *Adj DIV/NI*, the dividend pay-outs proxy that takes share buyback into account. The results, in Panel B of Table 6, show positive and significant coefficients for the unexpected CSR disclosures, when controlling for the expected CSR disclosures, and further support H1.

To test the robustness of our method of estimation, we employ propensity score matching (PSM) analysis and the 2SLS approach to address the potential endogeneity concern that self-selection bias and omitted unobservable variables may confound our results. In PSM we use *High_Unexpected_CSR disclosure*, an indicator variable coded as one when the value of unexpected CSR disclosure is higher than the median for this variable, and zero otherwise. We include all the control variables from the main test to match treatment and control firms. To maximise our PSM sample size, we apply one-to-one nearest neighbour matching with replacement. This results in 1248 observations. *t*-Tests comparing the mean of each control variable in the regression model show no significant differences between the high and low unexpected CSR disclosure sub-samples apart from the *New* and *Capex* variables, which are at or above the 5% significance level. Hence including these variables in the regression model using the matched sample as covariates to reduce bias is necessary. Our results generated by the PSM sample, presented in Panel C of Table 6, show that unexpected CSR disclosure and dividend pay-outs are positively related, which is consistent with the main results presented in Panel A of Table 4 but at a higher significance level.

TABLE 4 The relation between unexpected corporate social responsibility (CSR) disclosure and dividends.

Dividends/net income	Original sample	
	Coef.	*p*-Value
Panel A: Full sample		
Unexpected CSR disclosure	**0.018**	**0.022**
Expected CSR disclosure	0.022	0.138
ROA	−3.731	0.000
B_M	−0.028	0.641
Fin	0.005	0.595
Internat	0.000	0.491
New	−0.237	0.086
Lev	0.136	0.270
Capex	−0.355	0.056
Volat	−0.004	0.149
CFO	0.133	0.020
Size	−0.174	0.008
Country PRIN1	−0.013	0.162
Country PRIN2	0.011	0.525
Ind_sens	−0.045	0.254
Utility	0.195	0.013
Constant	1.907	0.000
Year fixed effects	Yes	
N	1641	
Adj. R^2	7.31%	

Dividends/net income	Aligned reporting		Unaligned reporting	
	Coef.	*p*-Value	Coef.	*p*-Value
Panel B: Subsample analysis				
Unexpected CSR disclosure	**0.042**	**0.001**	**0.025**	**0.193**
Expected CSR disclosure	−0.012	0.616	0.016	0.488
ROA	−4.123	0.000	−3.088	0.001
B_M	−0.070	0.336	0.004	0.968
Fin	0.009	0.311	−0.006	0.819
Internat	0.000	0.690	0.000	0.873
New	−0.454	0.001	0.046	0.864
Lev	0.004	0.981	0.328	0.098
Capex	−0.266	0.147	−0.204	0.72
Volat	−0.005	0.143	−0.002	0.782
CFO	0.182	0.011	0.099	0.252
Size	−0.216	0.006	−0.088	0.436
Country PRIN1	0.005	0.687	−0.037	0.011
Country PRIN2	0.051	0.052	−0.051	0.033

TABLE 4   (Continued)

Dividends/net income	Aligned reporting		Unaligned reporting	
	Coef.	*p*-Value	Coef.	*p*-Value
Ind_sens	−0.046	0.359	0.067	0.368
Utility	0.186	0.021	0.199	0.216
Constant	2.230	0.000	0.515	0.553
Year fixed effects	Yes		Yes	
N	1034		607	
Adj. R^2	10.45%		6.97%	

Note: Panel A presents the regression results showing the relation between unexpected CSR disclosures and dividend pay-outs by using the full sample. Panel B presents the regression results showing the relation between unexpected CSR disclosures and dividend pay-outs for two subsamples. The first set of results are for the subsample that contains the observations with aligned unexpected CSR disclosure and CSR performance, that is, observations with either high unexpected CSR disclosure and high CSR performance, or low unexpected CSR disclosure and low CSR performance. The second set of results are for the subsample that contains the observations with unaligned unexpected CSR disclosure and CSR performance. See Appendix 1 for variable definitions.
The variable of interest is shown in bold.

To further check the robustness of the PSM results and address endogeneity concerns, we follow Saeed and Zamir (2021) to apply the 2SLS approach, using the industry-year mean value (3-digit SIC code) of our variable of interest, unexpected CSR disclosure, as an instrumental variable. This variable is considered a valid instrument as it satisfies the relevance and exclusion restriction conditions (Larcker & Rusticus, 2010). The industry-year level mean represents well the discretionary CSR disclosure in the industry and other industry characteristics, but beyond individual firm influence. The results are presented in Panel D of Table 6.[9] The results of the second stage of 2SLS, with country fixed effects, are presented in Panel E, and show that our main results are robust to this approach. We also follow Cheung et al. (2018), and check for reverse causality by using unexpected CSR disclosure as the dependent variable and dividend pay-outs as the independent variable. We find that dividend pay-out is insignificant (0.14, *p*-value = 0.159), when controlling for country and year fixed effects.

In another endogeneity test, following Liang and Renneboog (2017), and de Villiers et al. (2022), we use the 2010 Deepwater Horizon oil spill as an exogenous environmental shock to conduct a quasi-natural experiment to alleviate endogeneity concerns. Although this environmental shock occurred in the US, it was a high-profile event globally and raised awareness of environmental risks and the costly financial consequence of bad environmental performance in other countries (de Villiers et al., 2022). We first included observations with higher unexpected CSR disclosure into the treated group, and the observations with lower unexpected CSR disclosure into the untreated group and conducted a difference-in-differences (DID) test. The logic behind this is that firms with higher unexpected CSR disclosure are regarded as putting in more effort into CSR disclosure and valuing CSR disclosure higher than firms with lower unexpected CSR disclosure. Hence, we expect the firms with higher unexpected CSR disclosure to be more sensitive to the exogenous environmental shock. Our DID test generates a positive (1.33) interaction term,

[9]Untabulated first-stage regression results show that the industry-year mean value of the unexpected CSR disclosure is highly significantly associated with individual unexpected CSR disclosures (*p*-value of 0.00), validating the relevance condition. We examine the exclusion restriction by including the instrument as an additional control variable in the baseline model (Cao et al., 2021). Our untabulated results show that the industry-year mean value of the unexpected CSR disclosure is insignificantly associated with *DIV/NI* (*p*-value of 0.335). The Cragg-Donald Wald *F*-statistic is 113.349, which is above the critical value suggested by Stock and Yogo (2005), indicating that our IV is relevant and does not suffer from a weak instrument problem.

TABLE 5 Alternative proxies for corporate social responsibility (CSR) disclosure.

	Unexp dividend pay-outs		DIVINI		DIVIMV		DIVITA		DIVICFO		Adj DIVINI	
	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value
Panel A: Industry year adjusted unexpected CSR disclosure												
Unexpected CSR disclosure	**0.016**	**0.004**	**0.016**	**0.003**	**0.001**	**0.000**	**0.001**	**0.023**	**0.009**	**0.003**	**0.016**	**0.003**
Expected CSR disclosure	0.018	0.080	0.017	0.201	0.002	0.036	0.001	0.053	0.013	0.001	0.018	0.179
ROA	-2.493	0.000	-2.869	0.000	0.100	0.000	0.385	0.000	0.964	0.001	-2.783	0.000
B_M	-0.119	0.220	-0.171	0.119	0.010	0.036	-0.009	0.058	0.142	0.002	-0.170	0.111
Fin	0.006	0.645	0.003	0.815	0.000	0.700	0.000	0.432	0.000	0.945	0.003	0.820
Internat	0.000	0.933	-0.001	0.519	0.000	0.065	0.000	0.046	0.000	0.596	-0.001	0.497
New	-0.188	0.085	-0.251	0.030	-0.024	0.001	-0.014	0.110	-0.166	0.003	-0.252	0.028
Lev	0.019	0.868	-0.064	0.623	0.020	0.001	-0.005	0.611	0.310	0.000	-0.065	0.610
Capex	-0.530	0.000	-0.310	0.057	0.000	0.971	-0.020	0.069	-0.012	0.877	-0.307	0.058
Volat	-0.004	0.270	-0.004	0.258	-0.001	0.000	-0.001	0.000	-0.005	0.000	-0.005	0.230
CFO	0.025	0.590	0.064	0.218	0.011	0.000	0.005	0.004	-0.191	0.000	0.065	0.184
Size	-0.049	0.394	-0.089	0.153	-0.013	0.000	-0.006	0.000	0.186	0.000	-0.090	0.129
Country PRIN1	-0.011	0.193	-0.013	0.238	-0.001	0.143	0.000	0.922	-0.007	0.248	-0.013	0.231
Country PRIN2	0.008	0.662	0.009	0.686	0.000	0.765	0.000	0.744	-0.002	0.772	0.008	0.692
Ind_Sens	-0.015	0.769	-0.042	0.577	-0.003	0.523	-0.006	0.043	-0.032	0.173	-0.044	0.555
Utility	-0.005	0.945	0.167	0.063	0.013	0.002	0.005	0.180	0.077	0.035	0.170	0.054
Constant	0.993	0.005	1.633	0.000	0.073	0.000	0.065	0.003	-0.218	0.143	1.622	0.000
Year fixed effect	Yes		Yes		Yes		Yes		Yes		Yes	
N	1641		1641		1641		1641		1641		1641	
Adj. R^2	5.81%		8.53%		30.76%		45.12%		31.78%		8.76%	

TABLE 5 (Continued)

Dividends/net income	GRI_DV		GRI_2		GRI_4		CSR_Discl	
	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value
Panel B: Other alternative proxies								
CSR disclosure	**0.099**	**0.005**	**0.119**	**0.015**	**0.030**	**0.003**	**0.016**	**0.004**
ROA	−2.896	0.001	−2.878	0.002	−2.893	0.001	−2.869	0.001
B_M	−0.168	0.145	−0.172	0.135	−0.171	0.138	−0.171	0.137
Fin	0.003	0.826	0.003	0.795	0.003	0.812	0.003	0.812
Internat	−0.001	0.290	−0.001	0.314	−0.001	0.310	−0.001	0.336
New	−0.253	0.025	−0.245	0.026	−0.247	0.023	−0.251	0.022
Lev	−0.054	0.533	−0.071	0.427	−0.064	0.477	−0.064	0.482
Capex	−0.291	0.053	−0.307	0.043	−0.311	0.041	−0.309	0.040
Volat	−0.004	0.097	−0.005	0.093	−0.005	0.093	−0.004	0.096
CFO	0.062	0.219	0.064	0.206	0.063	0.215	0.064	0.210
Size	−0.083	0.178	−0.092	0.124	−0.088	0.152	−0.089	0.148
Country PRIN1	−0.013	0.143	−0.013	0.114	−0.013	0.128	−0.013	0.132
Country PRIN2	0.008	0.683	0.007	0.721	0.009	0.667	0.009	0.661
Ind_Sens	−0.039	0.527	−0.042	0.497	−0.042	0.504	−0.040	0.520
Utility	0.170	0.053	0.170	0.054	0.169	0.055	0.168	0.056
Constant	1.564	0.001	1.688	0.000	1.568	0.000	1.584	0.000
Year fixed effects	Yes		Yes		Yes		Yes	
N	1641		1641		1641		1641	
Adj. R^2	7.42%		7.55%		7.43%		7.34%	

Note: Panel A presents the results showing the relation between unexpected CSR disclosure and different proxies for dividend pay-outs, where unexpected CSR disclosure is calculated as the difference between the firm level CSR disclosure and the industry-year dividend pay-outs mean (median) disclosure. Panel B presents the results showing the relation between CSR disclosure and dividend pay-outs, using different proxies for CSR disclosure. See Appendix 1 for variable definition.
The variable of interest is shown in bold.

TABLE 6 Alternative proxies for dividends.

Panel A: Unexpected dividends/net income	Coef.	p-Value
Unexpected CSR disclosure	**0.016**	**0.027**
Expected CSR disclosure	0.023	0.100
ROA	−3.136	0.000
B_M	−0.026	0.639
Fin	0.008	0.380
Internat	0.000	0.863
New	−0.162	0.227
Lev	0.145	0.216
Capex	−0.586	0.001
Volat	−0.004	0.198
CFO	0.085	0.111
Size	−0.127	0.040
Country PRIN1	−0.012	0.175
Country PRIN2	0.011	0.522
Ind_Sens	−0.016	0.670
Utility	0.020	0.789
Constant	1.329	0.002
Year fixed effects	Yes	
N	1641	
Adj. R^2	5.10%	

Panel B: Other alternative proxies	DIVIMV		DIVITA		DIVICFO		Adj DIVINI	
	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value
Unexpected CSR disclosure	**0.001**	**0.000**	**0.001**	**0.000**	**0.010**	**0.000**	**0.018**	**0.018**

TABLE 6 (Continued)

	DIVIMV		DIVITA		DIVICFO		Adj DIVINI	
	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value
Expected CSR disclosure	−0.001	0.331	0.001	0.251	0.008	0.160	0.022	0.122
ROA	0.086	0.000	0.335	0.000	1.954	0.000	−3.646	0.000
B_M	0.022	0.000	0.000	0.844	−0.089	0.000	−0.026	0.662
Fin	0.000	0.994	0.000	0.149	−0.001	0.803	0.005	0.592
Internat	0.000	0.013	0.000	0.022	0.000	0.387	0.000	0.465
New	−0.032	0.000	−0.014	0.013	−0.128	0.003	−0.237	0.075
Lev	0.038	0.000	0.008	0.221	−0.019	0.670	0.136	0.255
Capex	0.016	0.024	−0.019	0.009	−0.044	0.438	−0.350	0.053
Volat	0.000	0.000	−0.001	0.000	−0.005	0.000	−0.005	0.125
CFO	0.007	0.000	0.009	0.000	−0.214	0.000	0.134	0.014
Size	−0.005	0.026	−0.011	0.000	0.205	0.000	−0.174	0.005
Country PRIN1	−0.001	0.087	0.000	0.935	−0.007	0.029	−0.013	0.147
Country PRIN2	0.000	0.751	0.000	0.723	−0.002	0.710	0.011	0.529
Ind_Sens	0.001	0.732	−0.005	0.009	−0.019	0.147	−0.045	0.244
Utility	0.014	0.000	0.008	0.001	0.061	0.008	0.199	0.009
Constant	−0.011	0.499	0.069	0.000	0.033	0.800	1.891	0.000
Year effect controlled	Yes		Yes		Yes		Yes	
N	1641		1641		1641		1641	
Adj. R^2	27.61%		45.52%		30.35%		8.45%	

Panel C: Propensity score matching analysis

		Means	
Variable	Treated	Control	p-Value
Expected CSR disclosure	2.785	2.832	0.635
ROA	0.067	0.069	0.610

(Continues)

TABLE 6 (Continued)

Variable	Means		p-Value
	Treated	Control	
B_M	0.587	0.593	0.781
Fin	0.347	0.219	0.203
Internat	63.614	64.244	0.670
New	0.497	0.483	0.031
Lev	0.600	0.595	0.504
Capex	0.082	0.069	0.003
Volat	25.595	26.123	0.157
CFO	13.922	13.914	0.898
Size	16.301	16.303	0.976
Country PRIN1	0.108	0.265	0.072
Country PRIN2	0.037	0.021	0.756
Ind_sens	0.360	0.336	0.298
Utility	0.085	0.063	0.088

Dividends/net income	Coef.	p-Value
Unexpected CSR disclosure	**0.023**	**0.006**
Expected CSR disclosure	0.024	0.151
ROA	−3.615	0.000
B_M	−0.009	0.895
Fin	0.013	0.200
Internat	0.000	0.623
New	−0.327	0.035
Lev	0.257	0.110
Capex	−0.401	0.060
Volat	−0.002	0.617

TABLE 6 (Continued)

Dividends/net income	Coef.	p-Value
CFO	0.143	0.035
Size	−0.186	0.018
Country PRIN1	−0.021	0.072
Country PRIN2	0.011	0.603
Ind_sens	−0.060	0.175
Utility	0.163	0.066
Constant	1.822	0.000
Year fixed effects	Yes	
N	1248	
Adj. R^2	8.74%	

Panel D: 2SLS second-stage results

	DIVINI		DIVIMV		DIVITA		DIVICFO		Adj DIVINI	
	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value
(Fitted)Unexpected CSR disclosure	**0.057**	**0.067**	**0.003**	**0.004**	**0.003**	**0.016**	**0.025**	**0.012**	**0.056**	**0.063**
Expected CSR disclosure	0.010	0.487	0.000	0.742	0.000	0.658	0.012	0.010	0.010	0.460
ROA	−2.851	0.000	0.000	0.000	0.388	0.000	0.955	0.000	−2.765	0.000
B_M	−0.171	0.004	0.011	0.000	−0.009	0.000	0.139	0.000	−0.170	0.003
Fin	0.003	0.710	0.000	0.563	0.000	0.364	0.000	0.953	0.003	0.711
Internat	−0.001	0.319	0.000	0.042	0.000	0.004	0.000	0.491	−0.001	0.295
New	−0.262	0.059	−0.026	0.000	−0.015	0.005	−0.157	0.000	−0.262	0.052
Lev	−0.063	0.629	0.021	0.000	−0.005	0.356	0.301	0.000	−0.064	0.613
Capex	−0.288	0.173	0.005	0.516	−0.016	0.058	−0.017	0.799	−0.284	0.164
Volat	−0.004	0.065	−0.001	0.000	−0.001	0.000	−0.005	0.000	−0.005	0.052
CFO	0.069	0.035	0.012	0.000	0.006	0.000	−0.189	0.000	0.070	0.027
Size	−0.089	0.029	−0.012	0.000	−0.006	0.000	0.181	0.000	−0.090	0.023

(Continues)

TABLE 6 (Continued)

	DIVINI		DIVIMV		DIVITA		DIVICFO		Adj DIVINI	
	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value
Country PRIN1	−0.012	0.220	−0.001	0.065	0.000	0.930	−0.008	0.010	−0.012	0.208
Country PRIN2	0.009	0.617	0.000	0.868	0.000	0.507	−0.002	0.722	0.008	0.632
Ind_Sens	−0.033	0.434	0.000	0.866	−0.004	0.021	−0.024	0.073	−0.033	0.423
Utility	0.167	0.032	0.014	0.000	0.006	0.044	0.083	0.001	0.171	0.023
Constant	1.575	0.000	0.055	0.000	0.053	0.002	−0.173	0.210	1.565	0.000
Year fixed effect	Yes		Yes		Yes		Yes		Yes	
N	1641		1641		1641		1641		1641	
Adj. R^2	6.93%		29.16%		43.73%		26.42%		7.13%	

Panel E: 2SLS second-stage results (country fixed effect controlled)

	DIVINI		DIVIMV		DIVITA		DIVICFO		Adj DIVINI	
	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value
(Fitted)Unexpected CSR disclosure	**0.053**	**0.084**	**0.003**	**0.002**	**0.003**	**0.016**	**0.025**	**0.010**	**0.053**	**0.078**
Expected CSR disclosure	−0.002	0.898	0.000	0.832	0.000	0.434	0.008	0.100	−0.001	0.942
ROA	−2.836	0.000	0.111	0.000	0.395	0.000	1.031	0.000	−2.751	0.000
B_M	−0.179	0.003	0.011	0.000	−0.009	0.000	0.138	0.000	−0.178	0.002
Fin	0.002	0.768	0.000	0.749	0.000	0.356	−0.001	0.806	0.002	0.775
Internat	−0.001	0.268	0.000	0.058	0.000	0.005	0.000	0.544	−0.001	0.252
New	−0.212	0.140	−0.021	0.000	−0.010	0.078	−0.110	0.013	−0.212	0.126
Lev	−0.013	0.923	0.023	0.000	−0.005	0.333	0.312	0.000	−0.013	0.921
Capex	−0.204	0.340	0.009	0.230	−0.011	0.183	0.028	0.667	−0.205	0.323
Volat	−0.004	0.091	−0.001	0.000	−0.001	0.000	−0.005	0.000	−0.004	0.070
CFO	0.072	0.029	0.012	0.000	0.006	0.000	−0.189	0.000	0.073	0.022
Size	−0.078	0.059	−0.011	0.000	−0.006	0.000	0.187	0.000	−0.079	0.048
Country PRIN1	0.070	0.732	0.007	0.326	0.006	0.421	0.081	0.203	0.076	0.702

TABLE 6 (Continued)

	DIVINI		DIVIMV		DIVITA		DIVICFO		Adj DIVINI	
	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value
Country PRIN2	0.049	0.463	0.002	0.502	0.004	0.173	0.031	0.134	0.045	0.485
Ind_Sens	−0.021	0.647	0.000	0.775	−0.003	0.149	−0.025	0.080	−0.022	0.620
Utility	0.161	0.051	0.014	0.000	0.002	0.464	0.073	0.004	0.167	0.037
Constant	1.540	0.030	0.063	0.012	0.056	0.046	−0.052	0.811	1.549	0.024
Country fixed effect	Yes		Yes		Yes		Yes		Yes	
Year fixed effect	Yes		Yes		Yes		Yes		Yes	
N	1641		1641		1641		1641		1641	
Adj. R^2	8.81%		32.60%		46.64%		31.78%		9.08%	

Note: Panel A presents the results showing the relation between unexpected CSR disclosure and unexpected dividends/net income. Panel B presents the results using different proxies for dividends. Panel C presents the PSM results. Panel D present the 2SLS second-stage results, using different proxies for dividend pay-outs. The instrumental variable is industry year mean unexpected CSR disclosure. In Panel E we extend the previous analysis to include country fixed effects. See Appendix 1 for variable definitions. The variable of interest is shown in bold.

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showing signs of increasing dividend payments. The result is statistically significant at the 10% level (p-value = 0.091).

Finally, we consider that if firms use idle resources for CSR activities (Huang & Watson, 2015), the financial crisis could have had a clear impact on CSR initiatives. A crisis can also lead to dividend cuts. Andres and Hofbaur (2017) state that when 'the first dividend cut becomes necessary, economic conditions have likely worsened, necessitating further (downward) adjustments'. We examine whether the positive association between unexpected CSR disclosures and dividends holds during the global financial crisis (GFC) period, by partitioning the sample between observations during the GFC (2008–2010) and after the GFC (2011–2013). Untabulated results show that unexpected CSR disclosure only has a significant and positive association with dividends in the after GFC period. The non-significant result during the GFC may have been caused either by firms changing their CSR disclosures, or their dividend pay-out policies, during the GFC.

4.5 | CSR disclosures, dividends and share prices

To test whether unexpected CSR disclosures are value relevant, we use the modified Ohlson (1995) model specified in Equation (3), excluding observations with negative book value (reducing the sample). The first set of results in Table 7 provides evidence that unexpected CSR disclosures are positively and significantly associated with share prices. Thus, capital markets attribute value to these disclosures, a reaction that is consistent with H3. The expected portion of CSR disclosures is not significant, indicating that this does not influence share prices. The coefficients estimated for *BVPS* and *EPS (excl Div)* are positive and statistically significant, as expected.

We next assess whether the association between unexpected CSR disclosures and share price is mediated by dividends, using Equations (4) and (5) to test H4. Results in column (2) of Table 7 show that *Unexp_CSR_Discl* has a positive and significant influence on *DPS*, the mediator. In the third set of results, we find that the coefficient of *Unexp_CSR_Discl* is insignificant, and the coefficient estimated for *DPS* is positive and statistically significant. This suggests that dividends have a full mediation effect in the relation between *Unexp_CSR_Discl* and *Price*. This full mediation is confirmed by the fact that the estimated coefficient for the indirect impact of the variable of interest is statistically significant and almost identical (in value) to the estimated coefficient of the total effect (untabulated results). Therefore, we conclude that there is a causal sequence among our variables of interest, as higher unexpected CSR disclosures have an impact on a firm's dividend policy, ultimately causing higher share prices.

We also conduct the mediation effects test on our subsamples (aligned and unaligned). The results are presented in Panel B. In the aligned subsample, results are consistent with those of the full sample: the positive association between unexpected CSR disclosures and share prices is fully mediated by dividends. In the unaligned subsample, both unexpected and expected CSR disclosures are not associated with share prices, and therefore, there can be no mediation. This implies that the mediation effect of dividends in the aligned subset of observations drives the mediation effect found in the full sample.

5 | CONCLUSION

Prior literature provides evidence that both CSR disclosures and dividends are positively associated with firm value, and managers are theorised to use these two discretionary mechanisms to signal financial prospects to market participants. In this paper we advance the literature by

TABLE 7 Direct and mediated impact of unexpected CSR disclosure on price.

		Structural equation model			
	Price (1)		DPS (2)		Price (3)	
	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value
Panel A: Full sample						
Unexpected CSR disclosure	**1.898**	**0.001**	**0.082**	**0.000**	**0.017**	**0.967**
Expected CSR disclosure	−0.567	0.599	−0.022	0.483	−0.054	0.946
BVPS	2.771	0.000	0.068	0.000	1.211	0.000
EPS (excl Div)	6.709	0.000	0.131	0.000	3.705	0.000
DPS					**22.961**	**0.000**
ROA	−4.189	0.905	3.540	0.001	−85.478	0.001
B_M	−37.614	0.000	−0.612	0.000	−23.560	0.000
Fin	−2.096	0.001	−0.052	0.005	−0.897	0.053
Internat	−0.017	0.683	−0.003	0.010	0.057	0.069
New	−13.767	0.175	−1.421	0.000	18.863	0.012
Lev	−11.054	0.226	0.625	0.020	−25.406	0.000
Capex	6.813	0.657	0.379	0.404	−1.880	0.868
Volat	−0.433	0.019	−0.021	0.000	0.047	0.729
CFO	7.556	0.003	0.267	0.000	1.432	0.445
Size	−13.495	0.000	−0.305	0.001	−6.499	0.003
Country PRIN1	−1.090	0.132	−0.042	0.052	−0.134	0.801
Country PRIN2	−5.651	0.000	−0.125	0.001	−2.782	0.003
Ind_sens	−6.298	0.047	0.108	0.249	−8.775	0.000
Utility	22.619	0.000	0.559	0.001	9.780	0.024
Constant	136.661	0.000	1.828	0.029	94.696	0.000
Year fixed effect	Yes					

(Continues)

TABLE 7 (Continued)

	Structural equation model					
	Price (1)		**DPS (2)**		**Price (3)**	
	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value
N	1511					
Sobel test	p-Value = 0.000					
Adj. R^2	90.03%		85.13%		94.61%	

Panel B: Subsample analysis

	Aligned reporting						Unaligned reporting					
	Price (1)		**Dividend per share (2)**		**Price (3)**		**Price (1)**		**Dividend per share (2)**		**Price (3)**	
	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value
Unexpected CSR disclosure	**2.637**	**0.008**	**0.075**	**0.011**	**0.949**	**0.196**	**1.335**	**0.200**	**0.096**	**0.002**	**−0.911**	**0.225**
Expected CSR disclosure	−0.716	0.717	−0.003	0.961	−0.651	0.656	−0.585	0.708	−0.013	0.787	−0.290	0.795
BVPS	2.665	0.000	0.072	0.000	1.037	0.000	2.631	0.000	0.052	0.000	1.412	0.000
EPS (excl Div)	5.712	0.000	0.069	0.003	4.158	0.000	11.794	0.000	0.334	0.000	4.026	0.000
DPS					**22.526**	**0.000**					**23.284**	**0.000**
ROA	−16.760	0.733	3.097	0.034	−86.516	0.018	−15.017	0.749	3.558	0.012	−97.874	0.004
B_M	−40.465	0.000	−0.670	0.000	−25.367	0.000	−35.805	0.000	−0.460	0.008	−25.096	0.000
Fin	−2.426	0.001	−0.050	0.026	−1.300	0.020	−0.826	0.450	−0.039	0.234	0.087	0.912
Internat	−0.009	0.870	−0.003	0.131	0.049	0.250	−0.059	0.330	−0.005	0.013	0.047	0.281
New	−12.283	0.350	−1.336	0.001	17.800	0.070	−17.822	0.231	−1.665	0.000	20.943	0.052
Lev	−15.720	0.214	1.067	0.005	−39.753	0.000	−16.584	0.177	−0.203	0.583	−11.866	0.177

TABLE 7 (Continued)

	Aligned reporting						Unaligned reporting					
	Price		Dividend per share		Price		Price		Dividend per share		Price	
	(1)		(2)		(3)		(1)		(2)		(3)	
	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value	Coef.	p-Value
Capex	10.881	0.547	0.167	0.757	7.131	0.594	−22.273	0.486	0.101	0.916	−24.625	0.281
Volat	−0.522	0.042	−0.028	0.000	0.111	0.564	−0.233	0.370	−0.011	0.148	0.030	0.870
CFO	11.074	0.002	0.375	0.001	2.636	0.328	2.777	0.397	0.100	0.310	0.446	0.849
Size	−17.124	0.000	−0.471	0.000	−6.516	0.031	−7.862	0.061	−0.035	0.782	−7.049	0.019
PRIN1	−0.329	0.736	−0.021	0.471	0.144	0.843	−1.901	0.069	−0.088	0.005	0.153	0.838
PRIN2	−6.693	0.000	−0.152	0.004	−3.263	0.012	−3.767	0.039	−0.088	0.110	−1.726	0.186
Ind_sens	−0.646	0.876	0.191	0.121	−4.959	0.106	−18.788	0.000	−0.160	0.273	−15.057	0.000
Utility	18.184	0.013	0.479	0.028	7.386	0.173	36.158	0.000	0.889	0.002	15.448	0.024
Constant	152.080	0.000	2.837	0.012	88.184	0.002	113.849	0.012	0.221	0.871	108.703	0.001
Year fixed Effect	Yes						Yes					
N	956						555					
Sobel test	2.536 (*p* = 0.011)						3.053 (*p* = 0.002)					
Adj. *R*²	88.21%		83.40%		93.09%		93.79%		89.31%		96.83%	

Note: This table reports the results for the tests of the mediation effects of unexpected CSR disclosure on firms' market price through dividend per share. See Appendix 1 for variable definitions. The variable of interest is shown in bold.

considering (i) the relation of unexpected CSR disclosures with dividends, (ii) the relation of unexpected CSR disclosures with firms' share price, and (iii) whether dividends mediate the relation of unexpected CSR disclosures with firms' share price. Our sample includes 326 of the 500 largest industrial European firms.

We find that unexpected CSR disclosures are positively associated with dividends, while the expected CSR disclosures are not associated with dividends. This finding is robust to several alternative specifications of both the CSR disclosure and the dividends variables, and research method. The main result holds in a subsample of firms whose CSR disclosures and CSR performance are aligned, while there is no association in the unaligned subsample.

We further find that unexpected CSR disclosures are positively associated with share prices, and that this effect is fully mediated by dividends. This provides evidence of a causal sequence among our variables of interest and has major implications for the interpretation of prior firm value studies and requires future studies on the association between CSR disclosure and firm value to control for dividend payments. Our findings have clear managerial implications, as managers develop joint strategies for disclosing CSR information and making decisions about dividends, to optimise the potential effect on share prices.

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DATA AVAILABILITY STATEMENT
Data is available upon request.

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REFERENCES

Allen, F. & Michaely, R. (2003) Dividend policy. In: Constantinides, G., Harris, M. & Stulz, R. (Eds.) *Handbook of the economics of finance*. Amsterdam: North-Holland.

Ambarish, R., John, K. & Williams, J. (1987) Efficient signaling with dividends and investments. *The Journal of Finance*, 42(2), 321–343.

Andres, C. & Hofbaur, U. (2017) Do what you did four quarters ago: trends and implications of quarterly dividends. *Journal of Corporate Finance*, 43, 139–158.

Arouri, M. & Pijourlet, G. (2017) CSR performance and the value of cash holdings: international evidence. *Journal of Business Ethics*, 140(2), 263–284.

Atanassov, J. & Mandell, A. (2018) Corporate governance and dividend policy: evidence of tunneling from master limited partnership. *Journal of Corporate Finance*, 53, 106–132.

Benlemlih, M. (2019) Corporate social responsibility and dividend policy. *Research in International Business and Finance*, 47, 114–138.

Brooks, C. & Oikonomou, I. (2018) The effects of environmental, social and governance disclosures and performance on firm value: a review of the literature in accounting and finance. *The British Accounting Review*, 50(1), 1–15.

Cahan, S., De Villiers, C., Jeter, D., Naiker, V. & Van Staden, C. (2016) Are CSR disclosures value relevant? Cross-country evidence. *European Accounting Review*, 25(3), 579–611.

Cao, Y., Dong, Y., Ma, D. & Sun, L. (2021) Customer concentration and corporate risk-taking. *Journal of Financial Stability*, 54, 100890.

Cheng, M., Green, W. & Ko, J. (2015) The impact of strategic relevance and assurance of sustainability indicators on investors' decisions. *Auditing: A Journal of Practice and Theory*, 34(1), 131–162.

Cheung, A., Hu, M. & Schwiebert, J. (2018) Corporate social responsibility and dividend policy. *Accounting and Finance*, 58(3), 787–816.

Cho, S., Lee, C. & Pfeiffer, R. (2013) Corporate social responsibility performance and information asymmetry. *Journal of Accounting and Public Policy*, 32(1), 71–83.

de Villiers, C., Jia, J. & Li, Z. (2022) Corporate social responsibility: a review of empirical research using Thomson Reuters Asset4 data. *Accounting & Finance*, 62(4), 4523–4568.

De Villiers, C. & Ma, D. (2017) The association between corporate social responsibility and dividend pay-outs. *International Journal of Critical Accounting*, 9(5–6), 460–480.

De Villiers, C. & Marques, A. (2016) Corporate social responsibility, country-level predispositions, and the consequences of choosing a level of disclosure. *Accounting and Business Research*, 46(2), 167–195.

De Villiers, C., Naiker, V. & Van Staden, C. (2011) The effect of board characteristicson firm environmental performance. *Journal of Management*, 37(6), 1636–1663. https://doi.org/10.1177/0149206311411506

De Villiers, C. & Van Staden, C. (2011) Where firms choose to disclose voluntary environmental information. *Journal of Accounting Public Policy*, 30, 504–525.

Deng, X., Kang, J. & Low, B. (2013) Corporate social responsibility and stakeholder value maximization: evidence from mergers. *Journal of Financial Economics*, 110, 87–109.

Dhaliwal, D., Li, O., Tsang, A. & Yang, Y. (2011) Voluntary nonfinancial disclosure and the cost of equity capital: the initiation of corporate social responsibility reporting. *The Accounting Review*, 86(1), 59–100.

Dhaliwal, D., Radhakrishnan, S., Tsang, A. & Yang, Y. (2012) Nonfinancial disclosure and analyst forecast accuracy: international evidence on corporate social responsibility disclosure. *The Accounting Review*, 87(3), 723–759.

Faccio, M., Lang, L. & Young, L. (2001) Dividends and expropriation. *American Economic Review*, 91(1), 54–78.

Guiral, A., Moon, D., Tan, H. & Yu, Y. (2020) What drives investor response to CSR performance reports? *Contemporary Accounting Research*, 37(1), 101–130.

Healy, P. & Palepu, K. (2001) Information asymmetry, corporate disclosure, and the capital markets: a review of the empirical disclosure literature. *Journal of Accounting and Economics*, 31, 405–440.

Huang, X. & Watson, L. (2015) Corporate social responsibility research in accounting. *Journal of Accounting Literature*, 34, 1–16.

Ioannou, I. & Serafeim, G. (2012) What drives corporate social performance? The role of nation-level institutions. *Journal of International Business Studies*, 43(9), 834–864.

KPMG, 2017, *The KPMG survey of corporate responsibility reporting 2017*. Available at: https://assets.kpmg.com/content/dam/kpmg/be/pdf/2017/kpmg-survey-of-corporate-responsibility-reporting-2017.pdf

KPMG, 2020, *The KPMG survey of sustainability reporting 2020*. Available at: https://kpmg.com/xx/en/home/insights/2020/11/the-time-has-come-survey-of-sustainability-reporting.html

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. & Vishny, R. (2000) Investor protection and corporate governance. *Journal of Financial Economics*, 58(1–2), 3–27.

Larcker, D. & Rusticus, T. (2010) On the use of instrumental variables in accounting research. *Journal of Accounting and Economics*, 49(3), 186–205.

Li, Y., Gong, M., Zhang, X. & Koh, L. (2018) The impact of environmental, social, and governance disclosure on firm value: the role of CEO power. *The British Accounting Review*, 50(1), 60–75.

Liang, H. & Renneboog, L. (2017) On the foundations of corporate social responsibility. *The Journal of Finance*, 72(2), 853–910.

Lys, T., Naughton, J. & Wang, C. (2015) Signaling through corporate accountability reporting. *Journal of Accounting and Economics*, 60(1), 56–72.

MacKinnon, D. & Dwyer, J. (1993) Estimating mediated effects in prevention studies. *Evaluation Review*, 17(2), 144–158.

McBarnet, D. (2005) Human rights, corporate responsibility and the new accountability. In: Campbell, T. & Miller, S. (Eds.) *Human rights and the moral responsibilities of corporate and public sector organisations*. Dordrecht, Netherlands: Springer, pp. 63–80.

Oh, H., Kim, H., Kim, J. & Lee, Y. (2021) Corporate social responsibility and operating cash flows: an examination of credit market incentives. *Journal of Business Finance and Accounting*, 48(7–8), 1494–1522.

Ohlson, J. (1995) Earnings, book values and dividends in equity valuation. *Contemporary Accounting Research*, 11(2), 661–687.

Pawliczek, A., Skinner, A. & Wellman, L. (2021) A new take on voice: the influence of BlackRock's 'Dear CEO' letters. *Review of Accounting Studies*, 26, 1088–1136.

Qiu, Y., Shaukat, A. & Tharyan, R. (2016) Environmental and social disclosures: link with corporate financial performance. *The British Accounting Review*, 48(1), 102–116.

Rakotomavo, M. (2012) Corporate investment in social responsibility versus dividends? *Social Responsibility Journal*, 8, 199–207.

Saeed, A. & Zamir, F. (2021) How does CSR disclosure affect dividend payments in emerging markets? *Emerging Markets Review*, 46, 100747.

Schadewitz, H. & Niskala, M. (2010) Communication via responsibility reporting and its effect on firm value in Finland. *Corporate Social Responsibility and Environmental Management*, 17, 96–106.

Shao, L., Chuck, C. & Guedhami, O. (2010) National culture and dividend policy. *Journal of International Business Studies*, 41(8), 1391–1414.

Stock, J. & Yogo, M. (2005) Testing for weak instruments in linear IV regression. In: Andrews, D.W.K. & Stock, J.H. (Eds.) *Identification and inference for econometric models: essays in honor of Thomas Rothenberg.* Cambridge, UK: Cambridge University Press, pp. 80–108.

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APPENDIX 1

VARIABLE DEFINITIONS

Variables of interest	
CSR_Discl	GRI A-level with external assessment coded 7, without external assessment coded 6; GRI B-level with external assessment coded 5, without external assessment coded 4; C-level with external assessment coded 3, without external assessment coded 2; firms do not disclose a GRI level coded 0
CSR_Discl4	A-level disclosures coded 4; B-level disclosures coded 3; C-level disclosures coded 2; firms do not disclose a GRI level coded 0
CSR_Discl2	Firms with a *CSR_Discl* value of 5 or above coded 1, and 0 otherwise
CSR_DisclDV	Indicator variable coded one when the firm discloses a GRI level, and zero otherwise
Unexp_CSR_Discl	The residual from model (2)
Country-level variables	
AntiSelf	Measure of legal protection of minority shareholders against expropriation by corporate insiders. This anti-self-dealing score, considers (1) vote by mail; (2) shares not blocked or deposited; (3) cumulative voting; (4) oppressed minority; (5) pre-emptive rights; and (6) capital to call meeting. Higher scores indicate less anti-self-dealing and better investor protection
Voice	Voice and accountability, a World Bank measure. Higher scores indicate a greater freedom for citizens to choose their government
Gov_Eff	Government effectiveness, a World Bank measure. Higher scores indicate greater effectiveness
Reg_Qual	Regulatory quality, a World Bank measure. Higher scores show better regulatory quality
Env_Perf	Environmental performance index, Yale Centre for Environmental Law and Policy. Higher scores indicate higher government commitment to environmental policy & law
Press	Freedom of the press, according to Reporters without Borders. Higher scores indicate less press freedom
PRIN1 and *PRIN2*	Principal component 1 and Principal component 2 from a principal component analysis of all other country-level variables
Firm-level variables	
CFO	Net cash flow from operations, measured as logarithm of total market value of equity
Size (MV)	Firm size measured as logarithm of total market value of equity

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ROA	Net income (before extraordinary items and preferred dividends)/total assets
B_M	Book to market value of equity ratio
Lev	Leverage ratio (total debt/total assets)
Internat	International trade (the percentage of sales made in countries where the firm is not headquartered)
Volat	Share price volatility (standard deviation of market-adjusted monthly stock return, measured for 1 year)
New	Firms' asset newness (net property plant and equipment (PPE)/gross PPE)
Capex	Capital expenditures (capital expenditures/sales)
Utility	Indicator variable coded one if the firm operates in the utilities industry (electricity, gas and wastewater), and zero otherwise
Ind_Sens	Indicator variable coded one if the firm operates in an environmentally sensitive industry (identified by the SIC codes described in De Villiers et al. (2011), except regulated utilities), and zero otherwise
Price	Closing share price, 90 days after fiscal year date, adjusted for capital issues such as stock splits and dividend payments during the year (in euros)
DPS	DPS represents the total dividends per share declared during the fiscal year for corporations. It also includes extra dividends declared during the year
Dividends	Dividends represents the total cash dividends paid on the firm's common stock during the fiscal year, including extra and special dividends
DIV/NI	Dividends divided by net income. NI is the net income before extraordinary items, preferred dividends and common dividends
EPS (incl Div)	EPS represents earnings per share for the fiscal year (in euros)
EPS (excl Div)	Earnings per share minus dividends per share (in euros)
BVPS	Book value per share at the firm's fiscal year-end (in euros)