

DOES ESG PERFORMANCE AFFECT DIVIDEND PAYOUTS? EMPIRICAL EVIDENCE FROM EUROPEAN COUNTRIES

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Abstract

The main objective of this paper is to fill an identified research gap by examining the relationship between environmental, social and governance (ESG) performance and dividend payouts. We use a panel regression model based on data from companies on the Stoxx Europe 600 Index between 2010 and 2022. The model incorporates sustainability variables, such as environmental, social and governance pillar scores, alongside the ESG controversies score, within the context of country sustainability. The estimation results revealed that the aggregated ESG score has a statistically significant and positive influence on the dividend payout ratio (*DPR*). When examining particular pillar scores, the impact of the social pillar is both significant and positive, whereas the effects of the other pillars are insignificant. The effect of the ESG controversies score on the *DPR* is statistically significant and negative. The incorporation of this score into the model does not change the effect of the social pillar score, although it changes the effect of the aggregated ESG score. The novelty of this paper lies in the examination of the link between ESG performance and dividend payouts employing the ESG controversies score, an approach not commonly used. The study also considers country-level sustainability and changes in European standards of non-financial reporting, which have not been investigated so far in the context of dividend payouts.

JEL Classifications: G34, G35, F23, M14

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1. Introduction

Corporate sustainability can be defined as meeting the needs of an enterprise's direct and indirect stakeholders, both in the present and the future (Dyllick and Hockerts, 2002; Giovannoni and Fabietti, 2013; WCED, 1987). According to the Triple-Bottom-Line (TBL) approach (Elkington, 1997), enterprises should strive to maintain a balance between economic, social, and environmental performance to create long-term value for all stakeholder groups (Sanders and Wood, 2015), while ensuring compliance with applicable laws (UN, 2012; SDSN, 2013). Holistic business models for sustainability (Jonker and Witte, 2006; Oželienė, 2017), typically based on the TBL approach, try to describe the mechanisms that enterprises use to convert their environmental, social, and governance (ESG) efforts into the satisfaction of shareholders, employees, customers, suppliers, local communities, and corporate financial performance. Perrini *et al.* (2011) emphasized the significance of employees' trust, customer loyalty, firm reputation, and reliability as drivers of stakeholder performance. These factors are enhanced by the integration of socially responsible activities in key management areas, which can improve the relationship between revenue and cost-related outcomes. Kantabutra and Ketrapakorn (2020) explained that within an enterprise, a crucial role is played by its members, who can only enhance corporate sustainability performance across economic, environmental, social, and governance dimensions when they are emotionally committed to implementing sustainability values and vision. Improved corporate sustainability performance, in turn, strengthens stakeholder satisfaction and brand equity.

Empirical research on corporate sustainability aims to identify a statistically significant relationship between corporate sustainability performance (CSP) and corporate financial performance (CFP) in both non-financial enterprises (Wagner, 2010; Jha and Rangarajan, 2020) and financial enterprises (Soana, 2011; Nizam *et al.*, 2019). Some researchers have also sought to determine its type (Barnett and Salomon, 2012; Nollet *et al.*, 2016) and direction (Behl *et al.*, 2022; Douissa and Azrak, 2022). Furthermore, they have conducted comparative analyses across countries (Przychodzeń, 2013) and industries (Tuppura *et al.*, 2016), considering the sustainability of countries (Xiao *et al.*, 2018) and industries (Ziegler *et al.*, 2007) as determinants of the CSP–CFP link.

While empirical research on the relationship between CSP and CFP is extensive, it usually focuses on the impact of ESG performance on an enterprise's profitability and market value (e.g., Gillan *et al.*, 2021). From the shareholders' perspective, the crucial information appears to be also the impact of ESG scores on dividend payouts, which can be seen by them as a direct financial benefit of corporate sustainability.

The relationship between corporate sustainability and dividend payouts can be explained through fundamental theories of enterprises, such as agency theory, signaling theory, and stakeholder theory. According to agency theory (Jensen and Meckling, 1976), as enterprises develop and ownership becomes separated from management, the goals of managers and shareholders begin to diverge. The desire of managers (agents) and shareholders (principals) to achieve goals and maximize their own benefits leads to agency conflict. This conflict is particularly pronounced in enterprises with significant free cash flows. High free cash flows may induce managers to overinvest in responsible and sustainable corporate initiatives, among others, which can result in a decline in shareholder value (Jensen, 1986). The financial tool for mitigating agency conflicts and limiting overinvestment is dividend payouts (Easterbrook, 1984), as confirmed in numerous studies (La Porta *et al.*, 2000; DeAngelo *et al.*, 2009; Michael, 2013; Yeo, 2018; Pepur *et al.*, 2019; Driver *et al.*, 2020; Hu *et al.*, 2020; Salvi *et al.*, 2024). With regard to agency theory, Matos *et al.* (2020) argued that enterprises with high ESG scores are expected to pay out high dividends to prevent overinvestment in ESG initiatives.

The second theoretical approach, based on information asymmetry, concerns the information content of dividends. Many studies have shown that dividend payouts reduce information asymmetry (Miller and Rock, 1985; Lin *et al.*, 2017; Kim *et al.*, 2021; Agarwal and Chakraverty, 2023). Dividend payouts serve as a positive signal from an enterprise, allowing investors to assess the enterprise's profitability and value (Bhattacharya, 1979). Research on the use of dividends for signaling purposes and its impact on the market price of shares and future company performance has been conducted for decades (Miller and Rock, 1985; Baker and Powell, 1999; Grullon *et al.*, 2005; Cheng *et al.*, 2007; Baker, 2009; Nguyen and Wang, 2013; Alaeto, 2020; Che and Fuller, 2020; Lin and Lee, 2021; Zhao, 2023). Furthermore, the literature also considers linking ESG initiatives with dividend signaling, although theoretical predictions are not clear. Ellili (2022) argued that ESG practices and dividends may act as substitutes, while Benlemlih (2019) underscored the importance of balancing the interests of shareholders and other stakeholders. Therefore, socially responsible enterprises pay out dividends to send a positive signal, showing that they take into account all stakeholders' interests (Benlemlih, 2019; Matos *et al.*, 2020; Salvi *et al.*, 2024).

This perspective is consistent with the third theoretical approach, i.e., stakeholder theory (Freeman *et al.*, 2004; Freeman *et al.*, 2010). According to stakeholder theory, managers ought to distribute wealth equitably to those who contribute to its creation (Gallo, 2004; Samet and Jarbouri, 2017). However, Matos *et al.* (2020) claimed that equitable wealth distribution can have opposite consequences. On the one hand, it can imply a decrease in dividends for

shareholders. On the other hand, enterprises that implement ESG initiatives can benefit from the perception of various stakeholders, particularly creditors. This may result in preferential treatment, potentially leading to lower financing costs. As a consequence, funds for dividend payouts can be made available.

Some papers have described the results of research on the impact of CSP on dividend payouts, although the results are inconsistent and often even contradictory. Samet and Jarboui (2017) examined the impact of corporate social responsibility (CSR) performance on dividends. They focused on European companies from 17 countries and showed that enterprises with higher CSR performance pay higher dividends. Using data from US-listed enterprises, Cheung *et al.* (2018) found no significant link between corporate social responsibility and the propensity to pay dividends. However, they demonstrated that enterprises with higher CSR performance tend to have a higher dividend payout ratio. Benlemlih (2019) showed that among US enterprises, those with high CSR pay out higher dividends. Their research also demonstrated that socially irresponsible enterprises adjust dividends more rapidly than socially responsible ones. It means that dividend payouts are more stable in high-CSR enterprises.

Matos *et al.*'s (2020) research on European companies did not reveal any relationship between ESG performance and the propensity to pay dividends. However, ESG scores – both the overall ESG score as well as environmental, social, and governance pillar scores – positively affect dividend stability. Nirino *et al.* (2020) analyzed Chinese listed companies and showed the negative impact of ESG practices on dividend payouts. Their findings underline that investing in ESG initiatives has an impact on shareholders' wealth, decreasing dividend payouts. Saeed and Zamir (2021) investigated enterprises listed in eight emerging markets: India, China, Indonesia, Pakistan, Malaysia, Korea, Turkey, and Russia. They revealed that CSR disclosures exert a negative impact on dividend growth, dividend payout, and dividend yield. Furthermore, this effect is more prevalent for enterprises with higher institutional ownership.

Ellili (2022) focused on enterprises listed in the UAE financial markets to investigate whether ESG disclosure is positively associated with dividend payouts. She found a positive relationship between ESG performance and dividend levels. Meanwhile, Zahid *et al.* (2023) investigated the relationship between ESG scores and dividend payouts using data on Western European listed enterprises that are leaders in ESG. They demonstrated a significant positive relationship between ESG performance and dividend levels. They argued that companies with strong ESG practices strive to meet the goals of all stakeholders, which is why they pay

dividends. However, a commitment to high-quality ESG activities causes dividends to grow slowly.

Dahiya *et al.* (2023) focused on the largest Indian listed enterprises and showed that CSR positively affects the dividend payout ratio. They explained that increased incomes and lower financial constraints are the likely factors that cause this relationship. Moreover, they argued that the positive link between CSR performance and dividend payouts suggests that the interests of shareholders and other non-financial stakeholders can be reconciled.

Although there are some studies on the relationship between ESG performance and dividends, this area remains insufficiently explored. Previous research into the link between ESG scores and payouts did not consider the issues of country-level sustainability or changes in European standards of non-financial reporting. Moreover, only a few papers (Benlemlih, 2019; Casey *et al.*, 2020; Bilyay-Erdogan *et al.*, 2023; Matuszewska-Pierzynka *et al.*, 2023) examined the ESG controversies score as a determinant of dividend policy. However, the results are mixed. Casey *et al.* (2020) revealed that the variable that describes ESG controversies is not statistically significant in any of the estimated models. Meanwhile, Benlemlih (2019) demonstrated a positive relationship between ESG controversies and dividends, while Bilyay-Erdogan *et al.* (2023) showed a negative one. Therefore, further research in this area is needed, especially research involving ESG controversies.

Hence, the main aim of this paper is to address the research gap by investigating the relationship between ESG performance and dividend payouts. To achieve this objective, we have formulated five research hypotheses. The empirical verification of these hypotheses was conducted using a panel regression model applied to European companies listed on the Stoxx Europe 600 Index for the years 2010–2022. The general model incorporates sustainability variables, including environmental, social, and governance pillar scores, alongside the ESG controversies score, which assesses a company's ability to mitigate environmental, social, and governance risks as reported in global media. All necessary financial and sustainability data were sourced from the London Stock Exchange Group (*LSEG*) *Eikon* (formerly *Refinitiv*) database. All calculations were performed in the *Gretl* statistical package.

The remainder of this paper is structured as follows. Section 2 presents the literature review and hypotheses development. Section 3 presents the methodology design. The analysis of our results is given in Section 4. Section 5 presents the concluding remarks and discusses them.

2. Literature review and hypotheses development

2.1. Related literature

The literature review reveals that interest in the relationship between CSP and dividend policy systematically increases. The studies have been conducted in different markets, such as Europe (Samet and Jarboui, 2017; Matos *et al.*, 2020; Ben Salah and Ben Amar, 2022; Bilyay-Erdogan *et al.*, 2023; Zahid *et al.*, 2023; Salvi *et al.*, 2024), the US (Cheung *et al.*, 2018; Benlemlih, 2019; Dahiya *et al.*, 2023), Asia (Nirino *et al.*, 2020; Sheikh *et al.*, 2020; Saeed and Zamir, 2021; Kim and Kim, 2022), Arabia (Ellili, 2022), as well as cross-market research (Lakhal *et al.*, 2023). Global companies have also been investigated (Casey *et al.*, 2020; Hendijani Zadeh, 2021; Matuszewska-Pierzynka *et al.*, 2023).

Those studies differ in terms of the research period. Most covered a period longer than ten years. However, in some cases, the research period was at least 20 years (Cheung *et al.*, 2018; Benlemlih, 2019; Matos *et al.*, 2020). While most studies focus on the 21st century, Cheung *et al.* (2018) and Benlemlih (2019) initiated their research in 1991.

The researchers employed various ESG databases, such as Sustainalytics, MSCI (formerly KLD), LSEG Eikon (formerly Refinitiv and Thomson Reuters) and Bloomberg. Sheikh *et al.* (2020) and Saeed and Zamir (2021) collected the ESG data themselves from companies' annual reports, while Kim and Kim (2022) used a local database, the Korean Corporate Governance Service (KCGS). Commonly used research methods include econometric methods such as ordinary least square (OLS) regression, panel regression, and logit regression.

Research on the relationship between CSP and dividend policy focuses on several areas. Some studies examined the impact of ESG performance on dividend payments (Nirino *et al.*, 2020; Saeed and Zamir, 2021; Ben Salah and Ben Amar, 2022; Salvi *et al.*, 2024). Meanwhile, other studies investigated the stability of payouts (Cheung *et al.*, 2018; Matos *et al.*, 2020; Hendijani Zadeh, 2021; Matuszewska-Pierzynka *et al.*, 2023) or the propensity to pay dividends (Sheikh *et al.*, 2020). There are also studies that consider the moderating role of various drivers in the link between ESG scores and dividend policy. The main moderators mentioned in the literature include institutional ownership (Saeed and Zamir, 2021; Ellili, 2022), the stage of a firm's life cycle (Dahiya *et al.*, 2023), audit quality (Zahid *et al.*, 2023), as well as shareholder friendliness and board monitoring (Lakhal *et al.*, 2023).

Table 1. Meta-analysis of the related literature

Authors	Sample/Period/ESG data/Methods	Main results of empirical studies
Samet and Jarboui (2017)	397 non-financial companies listed on the Stoxx Euro 600 index 2009–2014 Thomson Reuters-Asset 4 Panel regression	Companies with high CSR performance are more actively involved in payout policies Companies with high CSR performance prefer share repurchases to dividends CSR performance is a significant factor that determines the link between dividends and share repurchases
Cheung <i>et al.</i> (2018)	1,965 U.S. non-financial and non-utilities companies 1991–2010 KLD OLS regression	There is no link between CSR and the propensity to pay dividends Higher dividend payout ratios are observed in companies with higher CSR scores CSR activities are projects with a positive net present value that increase earnings and, hence, dividend payments
Benlemlih (2019)	3,040 U.S. companies 1991–2012 MSCI ESG STATS OLS regression	High CSR companies pay out higher dividends than those with low CSR Corporate governance, community, diversity, employee relations, and the environment are positively associated with high dividends Low CSR companies adjust dividends faster than high CSR companies Companies engaged in controversial activities, such as the military and alcohol, pay out lower dividends
Matos <i>et al.</i> (2020)	178 companies listed on the Stoxx Euro 600 index 2000–2019 Thomson Reuters Logit panel regression	More sustainable companies demonstrate a more stable dividend payout This finding holds true when specific ESG pillars are considered, especially in the environmental and governance dimensions Greater ESG performance indicates enhanced long-term alignment among all stakeholder groups due to a more proportional profit-sharing mechanism
Casey <i>et al.</i> (2020)	50 transnational companies from the IT sector 2019 Sustainalytics OLS regression	Companies with better ESG percentile rankings tend to have higher dividend yields Dividend policy is not affected by the controversy rating
Nirino <i>et al.</i> (2020)	181 Chinese companies from the CIS300 index 2019 Thomson Reuters Eikon OLS regression	ESG investment negatively affects dividend payouts Environmental and governance investments have a negative impact on dividend payouts, while the impact of social investment is positive but statistically insignificant
Sheikh <i>et al.</i> (2020)	215 Pakistan non-financial companies from the PSX 2010–2016 Companies' annual reports and websites OLS and logit regression	CSR activities increases the propensity to pay out dividends Dividend payers reduce the amount of dividend payments as CSR activities increase Family companies pay less in dividends but have a higher propensity to pay out dividends compared to their counterparts
Zadeh (2021)	354 non-financial and non-utilities companies from the S&P 500 index 2012–2019 Bloomberg	Environmental and social transparency is associated with increased corporate payouts, encompassing higher dividends and stock repurchases Companies with high environmental and social transparency exhibit greater stability in dividend payouts than those with low transparency

	Tobit regression	
Saeed and Zamir (2021)	721 non-financial listed companies from India, China, Indonesia, Pakistan, Malaysia, Korea, Turkey and Russia (8 emerging markets) 2010–2018 Companies' annual reports OLS regression	CSR disclosures negatively affect corporate dividend payments, and this negative effect is stronger for companies having higher institutional ownership investors
Ellili (2022)	30 Arabic companies from the DFM and ADX 2010–2020 Bloomberg Panel regression	The relationship between ESG and dividend payouts is positive Board of directors' independence positively moderates the link between ESG disclosure and dividend payments when foreign investors are in the ownership structure, and conversely, negatively moderates the link when institutional investors are the owners
Ben Salah and Ben Amar (2022)	75 French non-financial companies 2008–2018 Thomson Reuters-Asset 4 GLS regression	Companies' CSR practices positively affect their dividend policy Individual CSR components are crucial factors that prompt companies to pay out higher dividends
Kim and Kim (2022)	6,648 firm-year observations of Korean non-financial companies 2011–2021 Korean Corporate Governance Service (KCGS) Logit panel regression	There is a significant difference in dividend payments between good and poor ESG companies Good ESG companies are generally at a mature stage of their life cycle and are larger, more profitable, and less risky compared to poor ESG ones Almost 88% of the dividend difference between good and poor ESG companies is explained by the difference in firm characteristics, while the remaining part is estimated as the pure effect of ESG ratings Companies with good ESG ratings are willing to adopt a more shareholder-friendly dividend policy
Bilyay-Erdogan <i>et al.</i> (2023)	1,094 non-financial listed European companies 2002–2019 Refinitiv Eikon OLS and panel regression	Companies with higher ESG performance pay higher dividends Improvement in particular environmental, social, and governance scores increases dividend payouts The impact of the ESG controversy score on dividend payments is negative ESG performance enhances corporate dividends through two channels, namely earnings and risk
Dahiya <i>et al.</i> (2023)	390 non-financial and non-utilities companies listed on the NSE500 2008–2019 Bloomberg System GMM	CSR has a positive impact on dividend payments, but this impact is strongest in the case of environmental components The positive impact of CSR on dividends may result from enhanced earnings and reduced financial constraints as CSR improves The positive relationship between CSR and dividend payments is stronger for companies at the mature stage of their life cycle and for companies with higher information asymmetry The link between CSR and dividends becomes weaker when regulatory in the form of mandated CSR are implemented High-CSR companies adjust dividends more promptly than low-CSR companies

Zahid <i>et al.</i> (2023)	663 non-financial companies from Western Europe 2010–2019 Eikon Refinitiv Panel regression	The link between ESG and dividend payouts is positive Participation in high-quality ESG practices hampers dividend growth High-quality audits, particularly from Big Four firms, negatively moderate the relationship between ESG and dividends
Lakhal <i>et al.</i> (2023)	4,303 non-financial companies from 60 countries 2003–2019 Thomson Reuters Eikon Panel regression	Dividend payouts are positively associated with nine ESG metrics, except for the shareholder rights dimension, while dividend growth is negatively associated with them The relationship between dividend payouts and some CSR dimensions (environmental pillar, emission score, and CSR strategy) is negatively moderated through shareholder friendliness The relationship between dividend payouts and most CSR dimensions (excluding eco-innovation, workforce, and product responsibility) is positively moderated through board monitoring The relationship between dividend payouts and CSR has an inverted U-shaped The relationship between dividend payouts and CSR, as well as the moderating effects, is positive and stronger when market regulations are weaker
Matuszewska-Pierzynka <i>et al.</i> (2023)	188 of the top global companies 2012–2021 LSEG Eikon Logit regression	The effect of the overall ESG score on payout stability is statistically significant and negative only when the ESG controversies are not included in the model The significant effects of the environmental and social pillar scores are negative in some model specifications, while the effect of the governance pillar score is positive The effect of the ESG controversies score is statistically significant and positive in each model specification
Salvi <i>et al.</i> (2024)	3,207 European companies 2018–2022 Refinitiv OLS regression	The relationship between ESG practices and payout policy is statistically significant and positive The impact of environmental and social dimensions is also positive and significant, whether considering dividend payout or dividend yield

Note: This table presents the detailed analysis of selected literature, i.e., authors, sample, period, ESG database, methods and main results of empirical studies.

Moreover, Samet and Jarboui (2017) and Hendijani Zadeh (2021) demonstrated how CSR performance influences the substitution effect of dividends. Kim and Kim (2022) estimated the effect of ESG ratings, which does not depend on the difference in firm characteristics. Lakhali *et al.* (2023) revealed that the relationship between CSR and dividend payouts is an inverted U-shape and bidirectional.

A detailed analysis of selected literature is presented in Table 1.

2.2. Hypotheses development

Research on the relationship between CSP (ESG or CSR ratings) and dividend payouts provides mixed results. Nirino *et al.* (2020) and Saeed and Zamir (2021) found that the effect of aggregated sustainability performance on dividends was negative, although in most studies, this effect was positive. A positive relationship was observed by, among others, Cheung *et al.* (2018), Ellili (2022), Ben Salah and Ben Amar (2022), Bilyay-Erdogan *et al.* (2023), Zahid *et al.* (2023) and Salvi *et al.* (2024). However, Nirino *et al.* (2020) showed the significant but negative impact of environmental and governance investments on dividends. Overall, however, the impact of social investments appears to be positive but insignificant. Nevertheless, Hendijani Zadeh (2021) and Salvi *et al.* (2024) demonstrated the significant and positive effects of environmental and social transparency on payouts. Similarly, Bilyay-Erdogan *et al.* (2023) found that improved environmental, social, and governance scores increase dividend payments. Based on their findings, we posit the following hypotheses:

H1: The relationship between the aggregated ESG score and the dividend payout ratio is positive.

H2: The relationship between the environmental pillar score and the dividend payout ratio is positive.

H3: The relationship between the social pillar score and the dividend payout ratio is positive.

H4: The relationship between the governance pillar score and the dividend payout ratio is positive.

The literature review revealed only a few papers (Benlemlih, 2019; Casey *et al.*, 2020; Bilyay-Erdogan *et al.*, 2023; Matuszewska-Pierzynka *et al.*, 2023) that applied the ESG controversies score as a key determinant of dividend policy. Matuszewska-Pierzynka *et al.* (2023), investigating the relationship between ESG scores and the propensity to pay stable dividends, showed that the effect of the ESG controversies score is significant and positive. However, other studies, which focused on the link between controversies in ESG dimensions and dividend payouts, presented inconsistent results. Casey *et al.* (2020) found no significant

impact of controversy rating on dividends. Benlemlih (2019) showed that companies that engage in controversial activities, such as the military and alcohol, pay out lower dividends, while Bilyay-Erdogan *et al.* (2023) found the opposite. They demonstrated the negative impact of ESG controversy score on dividend payments, as controversial activities of companies may negatively affect their market valuation. To compensate shareholders for the decline in the firm's market value, the company may increase dividend payouts. Hence, we posit the last hypothesis:

H5: The relationship between the ESG controversies score and the dividend payout ratio is negative.

3. Research design

3.1. Data selection

The research hypotheses are verified using data from 2010 to 2022. The research sample comprises 403 non-financial enterprises from the European Union (EU) listed on the Stoxx Europe 600 Index on June 1, 2023. Initially, we qualified 600 companies for the research sample. However, one company was not recognized in the *LSEG Eikon* database, which served as the source for the financial indicators and sustainability scores used in this study. Then, 186 enterprises were excluded from the sample, including 109 enterprises operating in the financial sector, 55 enterprises outside the EU, and 22 enterprises without ESG data for each year from the research period. Finally, we excluded ten companies from the research sample due to incomplete data that prevented any year from being considered in the estimation process. Our final research sample is based on unbalanced panel data of 403 companies (3,836 firm-year observations) – in case of some companies, incomplete data caused that only a few years could be taken into account in the process of estimation. Our data is dominated by firms from the United Kingdom (93 firms: 23.08%; 936 firm-year observations: 24.40%) and the industrial sector (101 firms: 25.06%; 962 firm-year observations: 25.08%). Sample distribution across countries and sectors is presented in Table 2 and Table 3.

Our study distinguishes between countries at different levels of sustainable development. We define countries with a high level of sustainability as those with an overall ESG score higher than the third quartile of all ESG scores at the country level. These countries include Germany, Denmark, Sweden, the Netherlands, Luxembourg, and Austria. The other countries in the research sample are considered less sustainable.

Table 2. Sample distribution across countries

Country	Firms		Firm-year observations	
	No.	%	No.	%
Austria	5	1.241	51	1.330
Belgium	9	2.233	88	2.294
Cyprus	1	0.248	5	0.130
Denmark	21	5.211	200	5.214
Finland	15	3.722	155	4.041
France	62	15.385	622	16.215
Germany	60	14.888	561	14.625
Ireland	10	2.481	113	2.946
Italy	20	4.963	161	4.197
Luxembourg	8	1.985	57	1.486
Malta	1	0.248	7	0.182
Netherlands	23	5.707	203	5.292
Poland	4	0.993	33	0.860
Portugal	3	0.744	34	0.886
Spain	20	4.963	170	4.432
Sweden	48	11.911	440	11.470
United Kingdom	93	23.077	936	24.400
Total	403	100.000	3836	100.000

Note: This table presents the research sample across 17 European countries.

Table 3. Sample distribution across sectors

Sector	Firms		Firm-year observations	
	No.	%	No.	%
Basic Materials	33	8.189	352	9.176
Consumer Discretionary	71	17.618	694	18.092
Consumer Staples	35	8.685	335	8.733
Energy	18	4.467	156	4.067
Health Care	42	10.422	405	10.558
Industrials	101	25.062	962	25.078
Real Estate	29	7.196	248	6.465
Technology	27	6.700	240	6.257
Telecommunications	19	4.715	169	4.406
Utilities	28	6.948	275	7.169
Total	403	100.000	3836	100.000

Note: This table presents the research sample across 10 sectors of economy.

3.2. Empirical models

To verify the research hypotheses, we employ the panel regression approach. The general panel model is given by the following formula:

$$Dividend_{i,t} = \alpha_0 + \alpha_1 Return_{i,t-1} + \alpha_2 Liquidity_{i,t-1} + \alpha_3 Debt_{i,t-1} + \alpha_4 Growth_{i,t-1} + \alpha_5 Size_{i,t-1} + \alpha_6 Sector_{i,t} + \alpha_7 Year_{i,t} + \alpha_8 ESG_Country_{i,t-1} + \beta \mathbf{X}_{i,t-1} + \varepsilon_{i,t} \quad (1)$$

where:

$Dividend_{i,t}$ – dividend payout ratio of the i -th company in year t ;

$Return_{i,t-1}$ – return on assets of the i -th company in year $t-1$;

$Liquidity_{i,t-1}$ – current ratio of the i -th company in year $t-1$;

$Debt_{i,t-1}$ – leverage ratio of the i -th company in year $t-1$;

$Growth_{i,t-1}$ – growth opportunities measured by market-to-book value ratio of the i -th company in year $t-1$;

$Size_{i,t-1}$ – size measured by the value of total assets of the i -th company in year $t-1$;

$Sector_{i,t}$ – a binary variable that equals 1 if the sector in year t in which the i -th company mainly operates is technology, and 0 otherwise;

$Year_{i,t}$ – a binary variable that equals 1 if the DPR of the i -th company in year t is from the period between 2016 and 2022, and 0 otherwise;

$ESG_Country_{i,t-1}$ – a binary variable that equals 1 if the overall sustainability score of the country of origin of the i -th company in year $t-1$ is higher than the third quartile of all ESG scores at the country level, and 0 otherwise;

$\mathbf{X}_{i,t-1}$ – a vector that represents the sustainability performance of the i -th company in year $t-1$ and varies depending on the ESG scores considered in particular model specifications;

$\varepsilon_{i,t}$ – a random component.

Depending on the model specification, vector \mathbf{X} can consist of:

$ESG_Score_{i,t-1}$ – the aggregated sustainability score of the i -th company in year $t-1$;

$E_Score_{i,t-1}$ – the environmental pillar score of the i -th company in year $t-1$;

$S_Score_{i,t-1}$ – the social pillar score of the i -th company in year $t-1$;

$G_Score_{i,t-1}$ – the governance pillar score of the i -th company in year $t-1$;

$CONT_Score_{i,t-1}$ – the ESG controversies score of the i -th company in year $t-1$.

The model specifications, which differ in the composition of the \mathbf{X} vector, are given in Table 4. To estimate the proposed models, we use panel data for 403 European companies listed on the Stoxx Europe 600 Index over the 13-year period. Subsequently, the pooled OLS model is employed. The decision to use the pooled OLS model instead of the random-effects model or fixed-effects model is based on the results of the F test and the Hausman test. For all seventeen models, the p-values of the F test are above 0.05, while the p-values of the Hausman test do not exceed 0.05. All calculations are performed using the *Gretl* statistical package.

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- 12 $Dividend_{i,t} = \alpha_0 + \alpha_1 Return_{i,t-1} + \alpha_2 Liquidity_{i,t-1} + \alpha_3 Debt_{i,t-1} + \alpha_4 Growth_{i,t-1} + \alpha_5 Size_{i,t-1} + \alpha_6 Sector_{i,t} + \alpha_7 Year_{i,t} + \alpha_8 ESG_Country_{i,t-1} + \beta_1 G_Score_{i,t-1} + \beta_2 CONT_Score_{i,t-1} + \varepsilon_{i,t}$
- 13 $Dividend_{i,t} = \alpha_0 + \alpha_1 Return_{i,t-1} + \alpha_2 Liquidity_{i,t-1} + \alpha_3 Debt_{i,t-1} + \alpha_4 Growth_{i,t-1} + \alpha_5 Size_{i,t-1} + \alpha_6 Sector_{i,t} + \alpha_7 Year_{i,t} + \alpha_8 ESG_Country_{i,t-1} + \beta_1 E_Score_{i,t-1} + \beta_2 S_Score_{i,t-1} + \beta_4 CONT_Score_{i,t-1} + \varepsilon_{i,t}$
- 14 $Dividend_{i,t} = \alpha_0 + \alpha_1 Return_{i,t-1} + \alpha_2 Liquidity_{i,t-1} + \alpha_3 Debt_{i,t-1} + \alpha_4 Growth_{i,t-1} + \alpha_5 Size_{i,t-1} + \alpha_6 Sector_{i,t} + \alpha_7 Year_{i,t} + \alpha_8 ESG_Country_{i,t-1} + \beta_1 E_Score_{i,t-1} + \beta_2 G_Score_{i,t-1} + \beta_4 CONT_Score_{i,t-1} + \varepsilon_{i,t}$
- 15 $Dividend_{i,t} = \alpha_0 + \alpha_1 Return_{i,t-1} + \alpha_2 Liquidity_{i,t-1} + \alpha_3 Debt_{i,t-1} + \alpha_4 Growth_{i,t-1} + \alpha_5 Size_{i,t-1} + \alpha_6 Sector_{i,t} + \alpha_7 Year_{i,t} + \alpha_8 ESG_Country_{i,t-1} + \beta_1 S_Score_{i,t-1} + \beta_2 G_Score_{i,t-1} + \beta_4 CONT_Score_{i,t-1} + \varepsilon_{i,t}$
- 16 $Dividend_{i,t} = \alpha_0 + \alpha_1 Return_{i,t-1} + \alpha_2 Liquidity_{i,t-1} + \alpha_3 Debt_{i,t-1} + \alpha_4 Growth_{i,t-1} + \alpha_5 Size_{i,t-1} + \alpha_6 Sector_{i,t} + \alpha_7 Year_{i,t} + \alpha_8 ESG_Country_{i,t-1} + \beta_1 E_Score_{i,t-1} + \beta_2 S_Score_{i,t-1} + \beta_3 G_Score_{i,t-1} + \beta_4 CONT_Score_{i,t-1} + \varepsilon_{i,t}$
- 17 $Dividend_{i,t} = \alpha_0 + \alpha_1 Return_{i,t-1} + \alpha_2 Liquidity_{i,t-1} + \alpha_3 Debt_{i,t-1} + \alpha_4 Growth_{i,t-1} + \alpha_5 Size_{i,t-1} + \alpha_6 Sector_{i,t} + \alpha_7 Year_{i,t} + \alpha_8 ESG_Country_{i,t-1} + \beta_1 CONT_Score_{i,t-1} + \varepsilon_{i,t}$
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Note: This table presents 17 model specifications estimated in this study.

3.3. Description of variables

Detailed characteristics of the control and sustainability variables are presented in Table 5.

Table 5. Variables measurement

Variable	Measure	Details
$Dividend_{i,t}$	dividend payout ratio (<i>DPR</i>) of the <i>i</i> -th company in year <i>t</i>	relationship between total dividend paid out in year <i>t</i> and net earnings in year <i>t-1</i>
$Return_{i,t-1}$	return on assets (<i>ROA</i>) of the <i>i</i> -th company in year <i>t-1</i>	relationship between net profits and total assets
$Liquidity_{i,t-1}$	current ratio (<i>CR</i>) the <i>i</i> -th company in year <i>t-1</i>	relationship between total debt and total equity
$Debt_{i,t-1}$	leverage ratio (<i>DE</i>) of the <i>i</i> -th company in year <i>t-1</i>	relationship between total debt and total equity
$Growth_{i,t-1}$	market-to-book value ratio (<i>MVBV</i>) of the <i>i</i> -th company in year <i>t-1</i>	relationship between closing price of the share and book value per share
$Size_{i,t-1}$	value of total assets (<i>TA</i>) of the <i>i</i> -th company in year <i>t-1</i>	natural logarithm of total assets
$Sector_{i,t}$	dummy variable equals 1 if the sector in year <i>t</i> in which the <i>i</i> -th company mainly operates is technology, and 0 otherwise	according to the Industry Classification Benchmark (ICB)
$Year_{i,t}$	dummy variable equals 1 if the <i>DPR</i> of the <i>i</i> -th company in year <i>t</i> is from the period between 2016 and 2022, and 0 otherwise	according to the changes in European standards of sustainability reporting introduced by Directive 2014/95/EU of the European Parliament and of the Council
$ESG_Country_{i,t-1}$	dummy variable equals 1 if the overall sustainability score of the country of origin of the <i>i</i> -th company in year <i>t-1</i> is higher than the third quartile of all ESG scores at the country level, and 0 otherwise	sum of weighted scores in environmental, social, and governance pillars at the country level higher than 86.49
$ESG_Score_{i,t-1}$	sum of weighted scores in environmental, social, and governance pillars at the corporate level	weights depend on the sector in which the company operates
$E_Score_{i,t-1}$	company's effectiveness in avoiding environmental risk and taking advantage of environmental opportunities	company's impact on natural systems and complete ecosystems (resource use, emissions, innovations)
$S_Score_{i,t-1}$	company's reputation and its ability to inspire the trust and loyalty of employees, customers, and society	status of a company's license to operate (workforce, human rights, community, product responsibility)
$G_Score_{i,t-1}$	company's capacity to manage and control its corporate rights and obligations	assessment of internal systems and processes that make the board members and executives of a company act in the best interests of its long-term stakeholders (management, shareholders, CSR responsibility)
$CONT_Score_{i,t-1}$	company's exposure to ESG controversies and negative events reflected in global media	risk of controversies regarding environmental, social and governance dimensions of corporate sustainability

Note: This table presents the description of variables employed in model specifications.

The control variables consist of financial variables (*Return*, *Liquidity*, *Debt*, *Growth* and *Size*) as well as some sustainability variables (*Year* and *ESG_Country*). *Year* is related to

changes in European standards of sustainability reporting introduced by Directive 2014/95/EU of the European Parliament and of the Council. EU member states were obliged to adapt their national laws to this directive by December 6, 2016. The *ESG_Country* is a dummy variable, which equals 1 if the overall sustainability score of the country of origin of the *i*-th company in year *t*-1 is higher than the third quartile of all ESG scores at a country level, and 0 otherwise. The overall ESG score is calculated by the *LSEG Eikon* as the sum of weighted scores in environmental, social, and governance pillars at the country level. The third quartile of all ESG scores at the country level equals 86.49.

All sustainability scores (i.e., both the overall sustainability score and the particular sustainability pillar scores) range from 0 to 100. They are interpreted as follows: <0;25) – poor score, <25;50) – satisfactory score, <50;75) – good score, <75;100) – excellent score. The ESG controversies score also ranges from 0 to 100; enterprises with no controversies receive a score of 100.

4. Empirical findings

4.1. Descriptive statistics and correlation matrix

Table 6 presents the descriptive statistics of the variables based on the 3,836 firm-year observations. The mean dividend payout ratio is 80.495%, indicating that European companies, on average, distribute more than 80% of their net earnings. The average return on assets is 7.683%, exceeding the median (5.726%). The companies can be considered as profitable because *Return* is higher than 3.447% (Q1) for 75% of the total observations. The mean current ratio is 1.470, with a median of 1.258. The financial liquidity of the companies appears optimal, as 50% of the total observations range from 0.947 (Q1) to 1.707 (Q3). The leverage ratio is, on average, 86.991%, surpassing the median (62.163%). *Debt* is lower than 110.861% (Q3) for 75% of the total observations. Therefore, the companies can be recognized as having low indebtedness despite exhibiting significant disparities. The average market-to-book value ratio, that can be used as a rough proxy of companies' growth opportunities, is 4.975 (with a median of 2.581). This implies that the market value of European companies is, on average, close to five times larger than their book value. The mean *Size*, expressed as the natural logarithm of total assets, is 23.200.

Analyzing the corporate sustainability scores, the European companies reached a 'good' sustainability level because the average overall sustainability score ranges from 50 to 75 points. At least 25% of all total observations have an 'excellent' level of sustainability (Q3=78.173). The mean scores for the social and governance pillars are lower than the average *ESG_Score*,

while the mean environmental pillar score is higher. The ESG controversies score is 'excellent' for at least 75% of the total observations (Q1=85.359).

Table 6. Descriptive statistics (N = 3,836)

Variable	Mean	St. Dev.	Q1	Median	Q3
<i>Dividend, %</i>	80.495	488.686	30.066	47.007	69.572
<i>Return, %</i>	7.683	11.295	3.447	5.726	9.116
<i>Liquidity</i>	1.470	1.044	0.947	1.258	1.707
<i>Debt, %</i>	86.991	102.271	33.537	62.163	110.861
<i>Growth</i>	4.975	21.484	1.488	2.581	4.429
<i>Size</i>	23.200	1.522	22.125	23.141	24.324
<i>ESG_Score</i>	65.094	17.479	54.747	68.275	78.173
<i>E_Score</i>	68.285	20.532	55.645	72.980	84.403
<i>S_Score</i>	64.561	22.693	51.332	69.120	82.350
<i>G_Score</i>	60.320	21.547	44.566	63.675	77.742
<i>CONT_Score</i>	85.815	27.064	85.359	100.000	100.000

Note: This table presents the descriptive statistics of considered variables.

Table 7 shows the coefficients of the pairwise Pearson correlation between the independent variables. All correlations between the financial variables are statistically significant at 1%, except for the correlation between *Growth* and *Liquidity*, which is insignificant. The strongest significant dependence is between *Growth* and *Return*, with a coefficient signifying a positive and strong correlation ($r_{yx}=0.640$). The correlations of the aggregated ESG score with the financial variables are significant for all variables at the 1% level. The strongest dependence is revealed for *Size*, with a coefficient suggesting a positive and moderate correlation ($r_{yx}=0.508$).

All correlations of *ESG_Score* with particular pillar scores are positive and significant at 1%. The coefficient for *G_Score* ($r_{yx}=0.669$) is the lowest but indicates a strong dependence. The strongest significant correlation among particular ESG pillar scores is between *E_Score* and *S_Score*, with a coefficient demonstrating a positive and strong dependence ($r_{yx}=0.675$). The correlations of the ESG controversies score with the financial variables are significant at 1% for all variables except for *Growth*, which is significant at 5%.

Table 7. Correlation matrix (N = 3,836)

<i>Variable</i>	<i>Return</i>	<i>Liquidity</i>	<i>Debt</i>	<i>Growth</i>	<i>Size</i>	<i>ESG_Score</i>	<i>E_Score</i>	<i>S_Score</i>	<i>G_Score</i>	<i>CONT_Score</i>
<i>Return</i>	1.000									
<i>Liquidity</i>	0.129***	1.000								
<i>Debt</i>	-0.144***	-0.226***	1.000							
<i>Growth</i>	0.640***	-0.001	0.122***	1.000						
<i>Size</i>	-0.316***	-0.224***	0.155***	-0.184***	1.000					
<i>ESG_Score</i>	-0.137***	-0.141***	0.086***	-0.077***	0.508***	1.000				
<i>E_Score</i>	-0.157***	-0.133***	0.080***	-0.092***	0.485***	0.880***	1.000			
<i>S_Score</i>	-0.164***	-0.168***	0.087***	-0.106***	0.483***	0.822***	0.675***	1.000		
<i>G_Score</i>	-0.037**	-0.028*	0.035**	-0.015	0.240***	0.669***	0.377***	0.303***	1.000	
<i>CONT_Score</i>	0.087***	0.073***	-0.049***	0.037**	-0.394***	-0.283***	-0.250***	-0.235***	-0.196***	1.000

Note: This table presents the Pearson's correlation coefficient of independent variables. ***, ** and * denote a rejection of the null hypothesis of no cointegration at 1%, 5% and 10%, respectively.

The highest coefficient is for *Size* ($r_{yx}=0.394$), implying that the correlation of *CONT_Score* with the control variables is, at best, weak. The relationship between *CONT_Score* and *ESG_Score*, which is significant at 1%, is negative and weak ($r_{yx}=-0.283$). The strongest correlation of *CONT_Score* with particular sustainability pillar scores is with *E_Score* ($r_{yx}=-0.250$). Sustainability variables with correlation coefficients higher than ± 0.8 are not considered together in the same model specification. The independent variables in individual specifications of the general model are not strongly correlated with each other, as the coefficients range between -0.8 and 0.8 (Fooladi, 2012, pp. 691–692). The collinearity between independent variables was also evaluated with Variance Inflation Factors (VIF), which ranged between 1.060 and 2.183 in each model specification.

4.2. Estimation results

4.2.1. Panel regression models without the ESG controversies score

Table 8 presents the estimation results for eight specifications of the general model. Statistically significant coefficients for control variables are found in all eight model specifications for *Return*, *Growth*, *Sector* and *ESG_Country*. Both of the financial variables are significant at 1%, but the coefficient for *Return* is negative, while the coefficient for *Growth* is positive. This means that the dividend increases with an increase in the market-to-book value ratio and a decrease in the return on assets. The negative relationship between *Return* and dividend payouts can be explained by signaling theory and dividend smoothing. The other financial variables (i.e., *Liquidity*, *Debt* and *Size*) in these specifications are statistically insignificant. The dividend payouts are lower for companies in the technology sector. The coefficients for *Sector* are significant at 1% or 5%, depending on the model specification. Dividend payouts are lower in companies that operate in the technology sector than in other companies because their free cash flows are used for additional investment (in particular R&D expenditures) instead of paying out dividends. *ESG_Country* is negative and significant at 5% in all model specifications. It means that companies pay out lower dividends in countries at a higher sustainability level. The high institutionalization of sustainable development principles and practices in some European countries may enhance more fairer distribution of corporate earnings between various stakeholder groups.

Table 8. Estimation results of panel regression models without the ESG controversies score

Variables	Model specifications							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Intercept</i>	-71.423 (0.714)	-93.789 (-0.489)	-65.150 (-0.347)	-120.272 (-0.653)	-67.743 (-0.351)	-93.766 (-0.488)	-65.015 (-0.349)	-67.547 (0.724)
<i>Return</i>	-2.586*** (-4.087)	-2.560*** (-4.058)	-2.554*** (-4.041)	-2.563*** (-4.039)	-2.553*** (-4.025)	-2.564*** (-4.052)	-2.552*** (-4.014)	-2.552*** (-4.002)
<i>Liquidity</i>	5.264 (1.053)	5.208 (1.039)	5.293 (1.058)	4.815 (0.956)	5.247 (1.047)	5.165 (1.031)	5.306 (1.061)	5.259 (1.049)
<i>Debt</i>	0.002 (0.064)	0.003 (0.086)	0.002 (0.064)	0.002 (0.071)	0.002 (0.062)	0.003 (0.081)	0.002 (0.065)	0.002 (0.063)
<i>Growth</i>	0.860*** (3.656)	0.864*** (3.592)	0.862*** (3.574)	0.856*** (3.578)	0.861*** (3.555)	0.863*** (3.605)	0.862*** (3.567)	0.861*** (3.548)
<i>Size</i>	5.067 (0.573)	7.096 (0.836)	4.843 (0.590)	8.775 (1.054)	5.021 (0.583)	6.965 (0.787)	4.874 (0.576)	5.040 (0.574)
<i>Sector</i>	-18.285** (-2.448)	-17.521** (-2.465)	-21.170** (-2.513)	-17.844** (-2.428)	-21.481*** (-2.712)	-17.388** (-2.467)	-21.260** (-2.520)	-21.547*** (-2.710)
<i>Year</i>	6.982 (0.383)	11.172 (0.650)	5.963 (0.343)	11.363 (0.602)	5.843 (0.340)	10.615 (0.560)	6.088 (0.327)	5.953 (0.322)
<i>ESG_Country</i>	-36.220** (-2.102)	-36.204** (-2.102)	-35.754** (-2.121)	-38.768** (-2.316)	-36.068** (-2.096)	-36.464** (-2.203)	-35.681** (-2.204)	-35.997** (-2.187)
<i>ESG_Score</i>	0.722* (1.843)	-	-	-	-	-	-	-
<i>E_Score</i>	-	0.304 (1.094)	-	-	-0.063 (-0.286)	0.286 (1.000)	-	-0.061 (-0.277)
<i>S_Score</i>	-	-	0.677** (2.099)	-	0.718*** (2.716)	-	0.685* (1.948)	0.723*** (2.454)
<i>G_Score</i>	-	-	-	0.138 (0.447)	-	0.076 (0.243)	-0.025 (-0.074)	-0.021 (-0.062)
F test	0.942	0.942	0.943	0.942	0.943	0.942	0.943	0.943
(p-value)	(0.785)	(0.782)	(0.778)	(0.784)	(0.779)	(0.783)	(0.777)	(0.779)
Hausman test	41.325	41.457	41.404	42.146	42.280	42.458	43.435	44.249
(p-value)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
F(k, n-1)	3.984	4.304	4.242	4.785	3.839	4.520	4.662	4.248
(p-value)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Note: This table presents the estimated coefficients from model specifications 1-8. *, **, *** denote statistical significance at the 10%, 5%, and 1% level, respectively; the results of the t-Student test are given in parentheses.

The first model specification examines the impact of aggregated ESG performance on the amount of dividend payout. The coefficient for *ESG_Score* is positive ($\beta_1=0.722$) and statistically significant at 10%. Thus, an improvement in the overall ESG score leads to higher dividend payouts. The next three specifications reveal the separate effects of particular sustainability dimensions on the dividend payout ratio. The coefficients for all particular pillar scores are positive, but only *S_Score* is statistically significant (Specification 3). Furthermore, *S_Score* remains significant and positive when all particular pillar scores are considered together in one model (Specification 8) as well as in pairs (Specifications 5 and 7).

4.2.2. Panel regression models with the ESG controversies score

Table 9 presents the estimation results for nine specifications of the general model. As before, statistically significant coefficients are found in all currently considered model specifications for *Return* and *Growth*. It indicates that while holding book value and total assets at constant levels, the amount of dividend increases when the market value is higher and net earnings are lower. The coefficients for *Sector* and *ESG_Country* are still significant and negative.

When *CONT_Score* is introduced into the model, the coefficient for *ESG_Score* becomes insignificant. It suggests that the ESG controversies score is more crucial for stakeholders than the basic ESG score. This is because it offers more detailed insights into a company's exposure to risks across environmental, social, and governance dimensions, thereby reducing information asymmetry. The *CONT_Score* is consistently negative and significant in all model specifications, with values ranging between -0.599 and -0.560. The relationship between ESG controversies and the dividend amount is negative because mitigating risks in sustainability dimensions or taking actions to reduce their effects requires financial expenditures, which may lead to the necessity of reducing dividend payments. The only particular pillar score that is statistically significant in these model specifications is, once again, *S_Score*. The coefficient for the social pillar score is positive.

Table 9. Estimation results of panel regression models with the ESG controversies score

Variables	Model specifications								
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
<i>Intercept</i>	66.035 (0.455)	54.597 (0.380)	76.106 (0.541)	31.292 (0.247)	73.279 (0.500)	54.691 (0.393)	78.654 (0.581)	76.084 (0.540)	31.419 (0.246)
<i>Return</i>	-2.614*** (-4.151)	-2.594*** (-4.134)	-2.587*** (-4.121)	-2.593*** (-4.101)	-2.586*** (-4.104)	-2.594*** (-4.113)	-2.582*** (-4.079)	-2.581*** (-4.066)	-2.590*** (-4.119)
<i>Liquidity</i>	4.930 (1.009)	4.874 (0.996)	4.975 (1.019)	4.547 (0.925)	4.921 (1.005)	4.876 (0.997)	5.019 (1.029)	4.971 (1.016)	4.559 (0.927)
<i>Debt</i>	0.004 (0.131)	0.005 (0.154)	0.004 (0.132)	0.005 (0.144)	0.004 (0.129)	0.005 (0.152)	0.004 (0.135)	0.004 (0.133)	0.005 (0.149)
<i>Growth</i>	0.840*** (3.584)	0.843*** (3.527)	0.842*** (3.515)	0.833*** (3.501)	0.841*** (3.494)	0.843*** (3.525)	0.842*** (3.492)	0.841*** (3.473)	0.836*** (3.489)
<i>Size</i>	1.493 (0.198)	2.992 (0.421)	1.030 (0.149)	4.649 (0.699)	1.226 (0.167)	2.997 (0.408)	1.093 (0.155)	1.263 (0.170)	4.783 (0.807)
<i>Sector</i>	-18.330** (-2.452)	-17.667** (-2.486)	-20.963** (-2.481)	-18.103** (-2.464)	-21.314*** (-2.682)	-17.675** (-2.509)	-21.324** (-2.523)	-21.617*** (-2.710)	-18.217** (-2.426)
<i>Year</i>	7.700 (0.416)	11.276 (0.656)	6.493 (0.369)	12.011 (0.628)	6.358 (0.366)	11.307 (0.588)	7.003 (0.368)	6.865 (0.365)	12.438 (0.742)
<i>ESG_Country</i>	-34.569** (-2.097)	-34.419** (-2.090)	-34.004** (-2.113)	-36.533** (-2.324)	-34.358** (-2.087)	-34.403** (-2.205)	-33.687** (-2.208)	-34.009** (-2.190)	-36.433** (-2.253)
<i>ESG_Score</i>	0.620 (1.537)	—	—	—	—	—	—	—	—
<i>E_Score</i>	—	0.266 (0.949)	—	—	-0.071 (-0.321)	0.267 (0.933)	—	-0.062 (-0.281)	—
<i>S_Score</i>	—	—	0.616* (1.916)	—	0.662** (2.557)	—	0.648* (1.864)	0.687** (2.383)	—
<i>G_Score</i>	—	—	—	0.052 (0.154)	—	-0.004 (-0.013)	-0.099 (-0.277)	-0.095 (-0.266)	—
<i>CONT_Score</i>	-0.560* (-1.950)	-0.589** (-2.078)	-0.567** (-2.019)	-0.594** (-1.966)	-0.567** (-2.017)	-0.589* (-1.951)	-0.575* (-1.921)	-0.575* (-1.921)	-0.599** (-2.125)
F test (p-value)	0.944 (0.777)	0.944 (0.775)	0.945 (0.771)	0.944 (0.775)	0.945 (0.772)	0.944 (0.775)	0.945 (0.769)	0.945 (0.770)	0.944 (0.774)
Hausman test (p-value)	41.864 (0.000)	41.973 (0.000)	41.929 (0.000)	42.750 (0.000)	42.819 (0.000)	43.040 (0.000)	43.986 (0.000)	44.806 (0.000)	41.549 (0.000)
F(k, n-1) (p-value)	3.587 (0.000)	3.894 (0.000)	3.853 (0.000)	4.534 (0.000)	3.522 (0.000)	4.225 (0.000)	4.362 (0.000)	4.042 (0.000)	3.909 (0.000)

Note: This table presents the estimated coefficients from model specifications 9-17. *, **, *** denote statistical significance at the 10%, 5%, and 1% level, respectively; the results of the t-Student test are given in parentheses.

5. Discussion and conclusions

Our research on the relationship between ESG performance and dividend payouts was conducted among European companies listed on the Stoxx Europe 600 Index between 2010 and 2022. The novelty of this study is that it considers new sustainability variables, mainly *Year*, which is related to the changes in European standards of sustainability reporting, and *ESG_Country*, which represents the overall sustainability score of the country of origin. Furthermore, we incorporated the controversies ESG score into the model specifications, which reflects a company's exposure to ESG controversies and negative events reflected in global media. This sustainability variable was previously considered by only a few authors, who had mixed results.

Our research gives four main conclusions. First, the aggregated ESG score has a statistically significant and positive impact on the dividend payout ratio (*DPR*), but only when considered in the model specification without the controversies ESG score (*CONT_Score*). This finding is in line with Cheung *et al.* (2018), Ellili (2022), Ben Salah and Ben Amar (2022), Bilyay-Erdogan *et al.* (2023), Zahid *et al.* (2023), and Salvi *et al.* (2024). In turn, it is opposite to the findings of Nirino *et al.* (2020) and Saeed and Zamir (2021).

Second, the impact of the social pillar is both significant and positive, whereas the effects of the other pillars are insignificant. Nirino *et al.* (2020) showed that the impact of the social score on dividends is positive but statistically insignificant. On the other hand, Hendijani Zadeh (2021), Bilyay-Erdogan *et al.* (2023) and Salvi *et al.* (2024) obtained the opposite results because they found that the positive impact of the social score is significant. However, they also demonstrated that the other ESG scores have a positive and significant effect on payouts.

Third, the effect of *CONT_Score* on *DPR* is statistically significant and negative. Casey *et al.* (2020) found no significant impact of controversial activities on dividends. Benlemlih (2019) found that companies involved in activities such as the military and alcohol pay out lower dividends. Bilyay-Erdogan *et al.* (2023) presented contrasting results, which showed the negative impact of the ESG controversy scores on dividend payments. Hence, our findings in this scope are in line with those of Bilyay-Erdogan *et al.* (2023).

Fourth, including *CONT_Score* in the model specifications does not affect the impact of the social pillar score on *DPR*. Since not all sustainability variables revealed statistical significance, only the third and fifth research hypotheses can be confirmed.

The findings suggest that managers should prioritize their focus on the controversies within ESG dimensions and the social sustainability dimension, which encompasses aspects such as the workforce, community, human rights, and product responsibility. Furthermore,

CSP, calculated by independent rating agencies in the form of ESG scores, should be made publicly available to reduce the information gap between a company and its stakeholders. Of particular importance is the controversy ESG score, which is significant in our research and reflects the risk of controversies regarding the ESG dimensions of corporate sustainability.

The unique contribution of this paper lies in its exploration of the link between ESG performance and dividend payouts – an area that has not been extensively investigated in previous studies, particularly in the context of a company's controversial ESG actions. Future research should consider CSP from the perspective of ESG controversies, as they can significantly affect dividend policies. Additionally, the research should consider the degree of sustainable development at the country level, recognizing variations among EU countries despite their generally high sustainability. In the future, changes in EU regulations regarding ESG reporting standards should also be considered, as the revisions in these regulations from 2024 are more specific and mandatory, thus potentially more impactful than those before 2016.

The main limitation of our study is the composition of the research sample, which includes an insufficient number of companies from EU countries with lower sustainability levels. Thus, further research on the link between ESG performance and dividend policy should seek a broader representation of companies from Central and Eastern Europe and present the results separately for higher and lower sustainability countries.

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