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THE INFLUENCE OF FIRMS' ESG INITIATIVES ON FIRM VALUE

An Analysis of Select European Firms

Paolo Saona and Laura Muro

Introduction

It is not an option to do business as usual. The world is facing severe sustainability challenges that must be addressed urgently, such as climate change, population growth and inequality, dwindling clean energy supplies, and freshwater availability, among others (Conard, 2013; Vogt & Weber, 2019). There is a need for cooperation between governments, businesses, and the financial sector in order to rewire the economy for reaching the United Nations Sustainable Development Goals (CISL, 2015, July; updated 2017, November).

The European Union is concerned about these sustainability challenges and has responded to the climate change risk with the ambitious Green Deal,[1] which aims to transform the European Union into a competitive economy, free of net emissions of greenhouse gases by 2050. The plan sets out to boost the green and digital transitions and make Europe's economy fairer, more resilient, and more sustainable for future generations. The European Union has become a leader in international climate strategy (Oberthür & Dupont, 2021) and more specifically in the regulation and harmonization of ESG (environmental, social, and governance) firm disclosure for corporations, which ultimately impacts investors' perceptions of the company and, inevitably, on the firm value. Directive 2014/95 requires companies to provide annual reports on environmental, social, and employee matters. It also requires them to disclose anti-corruption and human rights policies as well as any bribery that may have been attempted in the last year. European Union regulations are in line with the 2030 United Nations Sustainable Development Goals and support the flow of private finance towards sustainable economic activities, making the transition to a carbon-neutral European economy by 2050 possible. As of today, a lingering question is how regulatory changes and sustainable innovations made by companies will impact their market perception and, ultimately, their valuation. This study seeks to shed some light on the answer to that question.

European companies are preparing their sustainability reports as a response not only to these regulation efforts made by the European Union but also to different pressures coming from investors, consumers, constituencies, and other relevant stakeholders (Tura et al., 2019; Wolf, 2014). These reports are based on sustainable business models that take into consideration new concepts of value creation (Bocken et al., 2013; Laukkanen & Tura, 2020); consequently, this

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reporting on sustainable initiatives has recently emerged as a new source of value for companies. Indeed, in this respect, Yang et al. (2017) develop a unified perspective for the creation of sustainable business models with embedded economic, environmental, and social cascades of value that are created, delivered, and captured in a value network. Hence, the theory supports an unambiguous relationship between the firm's disclosure of sustainability innovations and its corporate value.

These disclosure processes allow investors to make investment decisions that are better informed, which impact corporate performance and value. Impact investing is gaining momentum with global sustainable funds attracting almost USD 97 billion of net new money in the first quarter of 2022, according to Morningstar (2022). Investors are clearly demanding social and environmental impacts as well as profitability for their investments.

For instance, Taliento et al. (2019) explored the link between ESG and economic performance using a sample of companies listed on major European indices in Belgium, France, Germany, Italy, and Spain. They concluded that ESG responsibilities constitute a new competitive factor for today's corporations, ensuring good economic performance and sustainability concerns, and facilitating the creation of value in a comprehensive sense.

However, despite these suggested relationships, this field remains unexplored for most European corporations. Consequently, the goal of this study is to analyze how ESG disclosure for European firms impacts their perceived value, estimated by Tobin's Q. This study aims to explore the investor's side at the time of evaluating ESG policies, as little is actually known (Lehner, 2021). To the best of our knowledge, our research is the first study to explore how sustainability scores impact environmental, social, and governance innovations. Likewise, we believe it to be the first that investigates how internal corporate policies regarding the use of water, the efficient use of energy, sustainable packaging, and environmental supply chain policies affect valuation. We incorporate data from European countries using econometric models. Additionally, we conduct a comprehensive analysis by considering the differential impact of sustainable initiatives on firm value across multiple industrial sectors.

Our findings show that any of the three pillars of sustainability (environmental, social, and governance), taken individually, are positively associated with firm value. Once the industry effect is considered, the findings show that firms from environmentally friendly industries will see a better response in market perception as a result of improvements in their sustainability scores than companies in less environmentally friendly industries. The second section describes the theoretical framework and research hypotheses. The third section provides details of the methodology and our econometric methods, while the fourth section summarizes the main results. Finally, the study concludes in the fifth section.

Theoretical Framework

Since sustainability is linked to diverse disciplines, there are multiple theories that can be used to explain the relationship between ESG initiatives and their impact on the firm value (Loh et al., 2017). Some of the most remarkable theories in the finance discipline are highlighted in this section.

Agency theory deals with the conflict of interests in corporations caused by asymmetric incentives between the different interested parties (Berle & Means, 1933; Jensen & Meckling, 1976). As corporations become bigger, these potential conflicts may increase, and disclosing more information could reduce agency conflicts and recover otherwise lost company value (Galani et al., 2012). As observed in the empirical literature, ESG disclosure affects the risk, the cost of capital, and the profitability of a company, and therefore is used as a source of value.

Signaling theory states how companies can take different policies to signal their value to investors (Keasey & Short, 1997). Companies disclosing ESG information send signals to the market about their concerns and actions regarding sustainability. Prior research has provided insight into this. For instance, Singhvi and Desai (1971) found evidence of the relationship between an inadequate amount of information and poor firm economic performance. Their research proves how the quality of corporate disclosure influences the quality of financial investment decisions.

Legitimacy theory has become one of the most cited theories when explaining the relationship between ESG and firm performance (Gray et al., 1995). This theory assumes that companies increase their social disclosures as a strategy to alter the public's perception of its legitimacy, with the goal of influencing different stakeholders and ultimately society as a whole (Hooghiemstra, 2000). Legitimacy theory predicts how companies disclose ESG information to improve the image and the reputation of the firm and its value (Sharma & Song, 2018), and, consequently, to reduce the perceived risk (Albuquerque et al., 2019; Cheng et al., 2014; El Ghoul et al., 2011). The research of Lehner et al. (2019) provides insights into the development of strategies to create legitimacy, as there is a need for harmonization and convergence in financial and non-financial disclosures.

Wolf (2014) uses the resource dependence theory to illustrate how companies engage in sustainable supply chain management to eliminate a particular resource dependence problem. For instance, Neste, a traditional oil company from Finland, is taking advantage of a growing social demand for renewable fuel products by reducing its dependence on traditional oil products and focusing instead on sustainable aviation fuels. The company is using a proactive sustainable supply chain management strategy, integrating a long-term sustainability vision of its supply chain as a source of value-creating activity.

More recently, lifecycle management theories (LCM) have started gaining momentum in associating firms' sustainable strategies with firm value (Bianchi et al., 2022). In this line of reasoning, sustainability challenges should be addressed by taking into consideration the entire company life cycle (Buxel et al., 2015; Nilsson–Lindén et al., 2018; Nilsson–Lindén et al., 2019) and circular business models (Galvão et al., 2022). Take for example the case of SOCO International, a multinational energy company. Due to its economic activities in Virunga (the company planned to extract oil from a gorilla sanctuary in the Democratic Republic of Congo), the company experienced significant stakeholder pressure, which caused it to alter its decisions and even change its name.[2] The company performs its economic activities under a new name, Pharos Energy plc, and discloses its sustainability information as part of its new ESG policy disclosure, adopted after the social pressure on its legitimacy.

The empirical literature has found a positive relationship between ESG disclosure and firm value. For instance, Loh et al. (2017) found that in Singapore, the better the quality of the ESG information, the stronger the correlation is with firm value. Bakar and Ameer (2011), with a sample of listed companies from Malaysia, found a relationship between the readability of CSR communication and companies' performance. This finding supports the obfuscation hypothesis that links good financial performance with ease of readability and vice versa. Additionally, Clarkson et al. (2008) conducted a study with firms from the five most polluting industries in the United States and found a positive association between environmental performance and the level of discretionary environmental disclosures and its impact on firm performance. More recently, Chouaibi and Chouaibi (2021), in a sample of companies from France, Denmark, Sweden, Spain, Germany, the UK, and Canada, found that societal and ethical strengths increase firm value with the moderating effect of green innovation. Their research was conducted with a data set of companies from seven different countries headquartered in North America and Western Europe for the period 2005–2019. They show how corporations that integrate socially responsible practices into their strategies

create an intangible asset that promotes value generation. Our study adds value to the existent studies in the field, as it deals with an exhaustive sample of 19 European countries with a time period from 2010–2020 and different industry specifications that will be seen later in the chapter.

All these findings support our first hypothesis:

H1: More ESG disclosure will turn into a higher perceived market value.

Regarding contextual variables, the literature has identified that the industry sector in which the company operates plays a critical role in moderating the impact that ESG initiatives have on firm performance (Cai et al., 2012). For instance, the market scrutiny is sharply focused on sensitive industry sectors (or controversial industries as they have also been called), which are characterized by moral debates and political pressures, as well as environmentally irresponsible behavior like that observed in the energy sector, including oil and gas, paper pulp, and mining, among others (Lee & Faff, 2009). In this respect, the disclosure of negative or unfavorable information about a company by the media impacts the company's unsystematic or diversifiable risk which renders a negative impact on the company's valuation and performance (Bansal & Clelland, 2004). These authors use the corporate environmental legitimacy argument to support the notion that companies operating in highly sensitive industries tend to disclose more corporate social and environmental information to increase transparency and ensure legitimacy. By better positioning the corporate legitimacy, the company can isolate market criticism, because the adoption of institutional standards renders less inquiry from external agents (Bansal & Clelland, 2004). One example of this is the choice made by socially responsible funds that use ethical or negative screenings as benchmarks for excluding companies operating in such sectors from their investment portfolios (Zhang et al., 2020).

Hence, according to Sanches Garcia et al. (2017), corporations from environmentally sensitive industries disclose more environmental information than companies from non-environmentally sensitive industries. The environmentally sensitive companies face bigger pressures from their stakeholders related to environmental concerns than those firms operating in industries considered not to be environmentally sensitive (Galani et al., 2012). Consequently, as suggested by Modugu (2020), companies in these sectors are more prone to disclose a larger amount of sustainability information and are subject to heavier regulation, as their activities are supposed to be more environmentally harmful. For instance, Du and Vieira (2012) find a link between business strategy, corporate social responsibility practices, and communication strategies for oil companies as a tool to gain legitimacy in a controverted environment. Although there is evidence suggesting a positive relationship between ESG disclosure and industry sensitivity exists (Kansal et al., 2014; Reverte, 2009), it is not clear how strong such a relation is across different industry sectors. Similarly, Richardson and Welker (2001) indicate that in comparison to companies in non-sensitive industries, those firms operating in sensitive industries have better financial and social disclosure rates, but they exhibit worse financial performance than their counterparts at companies operating in non–controversial sectors. Conversely, however, in the context of BRICS countries, Sanches Garcia et al. (2017) found that companies in sensitive industries present superior environmental performance, even when controlling for firm size and country. Hence, our second hypothesis states the following:

H2: Industry sensitivity will exhibit an asymmetric impact of ESG disclosure on perceived firm value.

Methodology

Source of Information

We are interested in assessing if changes in environmental, social, and governance scores are drivers of firm value, and how such relationship is moderated by the industry sector. Our sample

comprised 2,982 firm-year observations from 318 companies in 19 European countries. The sample of companies includes those non-financial listed firms in their corresponding market index of the most traded and liquid firms in each country. Therefore, we included firms from Austria (ATX), Belgium (BE20), the Czech Republic (PX50), Denmark (OMX Copenhagen 20), Finland (OMX Helsinki 25), France (CAC40), Germany (DAX30), Hungary (BUX), Ireland (ISEQ20), Italy (IT40), Luxembourg (LUXX), the Netherlands (NL25), Norway (OMX Oslo 20), Portugal (PSI), Slovenia (SBITOP), Spain (IBEX35), Sweden (OMX Stockholm 30), Switzerland (SMI), and the United Kingdom (FTSE100). The period of analysis ranges from 2010 to 2020, and the sample includes an average of 9.4 continuous observations per company. Financial companies were removed from the sample because the characteristics of their reporting systems could have biased the overall results (Saona & San Martín, 2016). Similarly, companies in technical bankruptcy and those with missing information for the construction of relevant variables were also removed from the sample.

The hypotheses test is made by building panels of companies from Thomson REFINITIV EIKON. This dataset provides financial information and multiple ESG scores per company and year used in the empirical analysis, as well as information regarding the companies' emissions policies and scores related to the efficient use of resources like water, emissions scores, workforce score, the protection of human rights score, and corporate social responsibility score, among other sustainability indicators. In addition to this, country-level Worldwide Governance Indicators concerning accounting standards and legal systems by country were obtained from the updated work of Kaufmann et al. (2011) whose data set is publicly available on the World Bank's web page.[3] Finally, countries' economic freedom index is also used as an independent variable to explain companies' firm value. The economic freedom data is sourced from the Heritage Foundation's Index of Economic Freedom.[4] This is a reliable data set that supplies policy variables under a government's control (Heckelman & Stroup, 2000), which can subsequently impact a firm's performance.

Variables Definition

The dependent variable corresponds to the firm value $(LnFV)$ measured with the proxy for Tobin's Q, computed as the sum of the firm's market capitalization and the total liabilities and then divided by the firm's total assets (Johnson, 2003). The logarithmic transformation of this variable was used to mitigate the risk of a non-normal distribution of the dependent variable. The independent variables used to measure the firm's sustainable scores are the environmental score $(EScore)$, social score $(SScore)$, and government score $(GScore)$. Moreover, *IndexESG*1 represents the average of the three scores. In addition, we also used multiple individual scores as metrics of different sustainable aspects of the company such as i) the Resource Use Score $(ResourceScore)$, which reflects a company's performance and capacity to reduce the use of materials, energy, or water, and to find more eco-efficient solutions by improving supply chain management; ii) the Emission Reduction Score $(EmissionScore)$, which measures a company's commitment and effectiveness toward reducing environmental emission in the production and operational processes; iii) the Innovation Score $(InnovationScore)$, which reflects a company's capacity to reduce the environmental costs and burdens for its customers, thereby creating new market opportunities through new environmental technologies and processes or eco-designed products; iv) the Workforce Score $(WorkforceScore)$, which measures a company's effectiveness in job satisfaction, and maintaining a healthy, safe, and diverse workplace with equal opportunities and development opportunities for its workforce; v) the Human Rights Category Score $(HRightsScore)$, which

measures a company's effectiveness of respecting the fundamental human rights conventions; vi) the Community Score $(CommunityScore)$, which measures the company's commitment towards being a good citizen, protecting public health, and respecting business ethics; vii) the Product Responsibility Score $(ProductScore)$, which reflects a company's capacity to produce quality goods and services integrating the customer's health and safety, integrity, and data privacy; viii) the Management Score $(ManagementScore)$, which measures a company's commitment and effectiveness towards following best practice corporate governance principles; ix) the Shareholders Score $(ShareholdersScore)$, which measures a company's effectiveness towards equal treatment of shareholders and the use of anti-takeover devices; and x) the CSR Strategy Score $(CSRScore)$, which reflects a company's practices to communicate that it integrates the economic (financial), social, and environmental dimensions into its day-to-day decision-making processes. In addition to these scores, we also included policy scores like xi) the Policy Water Efficiency Score $(WaterPolicyScore)$; xii) the Policy Energy Efficiency Score $(EnergyPolicyScore)$, xiii) the Policy Sustainable Packaging Score $(PackagingScore)$; and xiv) the Policy Environmental Supply Chain Score $(SupplyChainScore)$, which incorporate the various forms of processes, mechanisms, and procedures to improve the use of water, energy, sustainable packaging/reducing the use of packaging for company products, and policies to include its supply chain in the company's effort to lessen its overall environmental impact, respectively. All these scores are provided by Thomson Reuters REFINITIV EIKON and are distributed in a range that goes from 0 to 1 with higher values as the corresponding sustainable score improves. Out of these last 14 scores, we created IndexESG2, which is the ESG index and also goes from 0 to 1.

A number of firm-level and country-level control variables were used. Firm size $(Size)$ was computed as the natural logarithm of the firm's total assets, and the return on assets (ROA) was used as a measure of the firm's profitability corresponding to the net income over total assets. We also used the leverage (Lev) computed as the firm's total liabilities over total assets, the capital expenditure $(CAPEX)$ calculated as the annual growth in the gross property plant and equipment divided by total assets, and the Altman (1968) Z-Score as a measure of the company's default risk $(ZScore)$. This metric is defined as Z-Score. $ZScore = 1.2WK_{it} + 1.4RE_{it} + 3.3EBIT_{it} + 0.6MK_{it} + 0.99S_{it}$, where WK_{it} is the working capital over total assets of the i company in the period t; RE_{it} is the company's retained earnings over total assets; $EBIT_{it}$ is the earnings before interest and taxes divided by total assets; MK_{it} is the market value of the firm's equity over total liabilities; and S_{it} is the sales over total assets. By construction, greater values of this measure imply lower default risk.

At the country level, we also introduced variables in the model to prevent specification problems. For instance, we used *EconFree* to represent the country's economic freedom index. This variable ranges from 0 to 1, with 1 representing greater economic freedom. This index is based on 12 quantitative and qualitative factors, which are grouped into categories of economic freedom in the rule of law, government size, regulatory efficiency, and open markets. The index is intended to measure the prosperity of individuals in a country and their freedom to work, consume and produce, impacting directly on the corporate sector of the economy, and consequently on the performance of companies. Finally, we also included the World Governance Indicator (WGI), which measures the quality of the governance and policies in a country (Kaufmann et al., 2011). This indicator considers six aspects of good governance, such as voice and accountability, the country's political stability and absence of violence/terrorism, government effectiveness, regulatory quality, rule of law, and control of corruption. By construction, the index ranges from 0 to 1 with higher values as the governance in the country is improved.

Consequently, the regression model takes the following form:

$$LnFV_{it} = \beta_0 + \beta_1 ESG_{it} + \sum_{j=1}^{J} \theta_j FLCV_{it} + \sum_{k=1}^{K} \theta_k CLCV_{ct} + \mu_i + \delta_t + \varepsilon_{it} \quad (1)$$

where $LnFV$ represents the dependent variable corresponding to the firm value, ESG is the variable corresponding to the different ESG scores, $FLCV$ represents the vector of $J = 5$ firm-level control variables included in the analysis (e.g., $Size$, ROA, Lev, $CAPEX$, and $ZScore$), and $CLCV$ corresponds to the $K = 2$ country-level control variables (e.g., $EconFree$ and WGI). The model also includes the individual effect (μ_i), the temporal effect (δ_t), and the stochastic error (ε_{it}).

Interpretation of Results

Descriptive Statistics

The basic statistics exhibited in Table 10.1 highlight that for the companies included in the sample, the average value of the firm value metric (FV) is higher than the unit, indicating that a typical European company has a positive market perception (mean value equals 0.136 in the logarithmic transformation $(LnFV)$ used in the regression analysis).

The scores of the three pillars of Environmental $(EScore)$, Social $(SScore)$, and Governance $(GScore)$ also indicate relatively high average values for our sample in comparison to emerging markets (Azmi et al., 2021). Nevertheless, it is highlighted that the minimum and maximum values of these variables are also very extreme, indicating that there are companies in the sample with very high sustainability standards while other companies exhibit a very low commitment to policies that are environmentally driven. Our composite metric that incorporates the three pillars $(IndexESG1)$ exhibits an average value of 0.638. Almost all the remaining 14 sustainability scores exhibit average numbers higher than 0.5, meaning that a typical European company complies relatively well with the environmental, social, and governance indicators. The only score that remains low is the one associated with the sustainable packaging systems followed by the companies to reduce the use of packaging for products $(PackagingScore)$, which exhibits an average of 0.361 for the companies' sample.

Regarding the control variables, the table shows that for every euro companies have in assets, 5.4 cent in after-tax income is generated (ROA). Additionally, 25.1% of the firm's total portfolio of investments is financed with debt (Lev), while the addition of fixed assets that represent capital expenditure represents 4.80% of total assets. The last control variable used in this study corresponds to the default risk $(ZScore)$, which indicates that average firms are relatively safe and are far away from insolvency.

The country-level variables indicate that the average economic freedom index $(EconFree)$ ranks the countries as mostly free according to the Heritage Foundation, corresponding to the second highest category of economic freedom. Similarly, the World Governance Indicator (WGI) exhibits an average of 0.787, which represents a relatively strong indicator of the governance quality of the countries included in the sample as compared with emerging markets (Saona & San Martín, 2018).

Table 10.2 shows the correlation matrix of the variables used in the analysis. We do not observe significantly high correlations among the right-hand side variables in the model, which

Table 10.1 Descriptive statistics

Variables	*Mean*	*Std. Dev.*	*Min.*	*Max.*	*p25*	*p50*	*p75*	*Kurtosis*	*Skewness*
FV	1.408	1.081	0.073	8.607	0.749	1.068	1.644	12.071	2.600
LnFV	0.136	0.617	–2.613	2.153	–0.289	0.066	0.497	3.569	0.359
EScore	0.647	0.232	0.000	0.986	0.511	0.705	0.827	2.937	–0.843
SScore	0.674	0.208	0.016	0.986	0.548	0.712	0.841	2.843	–0.754
GScore	0.594	0.217	0.024	0.983	0.439	0.623	0.769	2.292	–0.413
IndexESG1	0.638	0.177	0.032	0.943	0.538	0.667	0.772	3.147	–0.741
IndexESG2	0.607	0.167	0.016	0.912	0.512	0.637	0.731	3.156	–0.778
ResourceScore	0.717	0.256	0.000	0.998	0.575	0.794	0.929	3.284	–1.043
EmissionScore	0.709	0.257	0.000	0.998	0.573	0.789	0.915	3.318	–1.069
InnovationScore	0.445	0.336	0.000	0.998	0.074	0.500	0.750	1.603	–0.027
WorkforceScore	0.788	0.194	0.003	0.999	0.692	0.845	0.943	4.099	–1.229
HRightsScore	0.605	0.333	0.000	0.995	0.363	0.715	0.896	2.077	–0.687
CommunityScore	0.638	0.284	0.000	0.998	0.413	0.694	0.892	2.079	–0.521
ProductScore	0.635	0.297	0.000	0.998	0.423	0.718	0.886	2.324	–0.709
ManagementScore	0.605	0.277	0.002	0.999	0.396	0.644	0.849	2.049	–0.418
ShareholderScore	0.545	0.288	0.005	0.999	0.302	0.573	0.798	1.811	–0.181
CSRScore	0.611	0.284	0.000	0.999	0.409	0.696	0.840	2.299	–0.644
WaterPolicyScore	0.532	0.356	0.000	0.942	0.000	0.722	0.786	1.719	–0.767
EnergyPolicyScore	0.631	0.192	0.000	0.967	0.622	0.668	0.720	9.009	–2.585
PackagingScore	0.361	0.417	0.000	0.973	0.000	0.000	0.837	1.162	0.323
SupplyChainScore	0.640	0.301	0.000	0.970	0.680	0.761	0.811	3.656	–1.541
Size	23.090	1.434	17.653	26.914	22.090	23.057	24.142	3.020	–0.116
ROA	0.054	0.059	–0.438	0.285	0.026	0.050	0.080	11.007	–0.708
Lev	0.251	0.142	0.000	0.867	0.152	0.241	0.344	2.920	0.355
CAPEX	0.048	0.034	0.000	0.227	0.024	0.041	0.065	5.371	1.303
ZScore	13.708	12.154	1.976	71.270	5.617	9.689	16.933	7.247	1.997
EconFree	72.724	5.189	58.800	82.500	69.600	73.900	76.400	2.384	–0.448
WGI	0.787	0.062	0.585	0.875	0.754	0.790	0.842	3.010	–0.742

Notes: The table details the descriptive statistics of the variables used in the empirical analysis. The table shows the mean value and standard deviation of the observations, the p25, p50, and p75 values, the minimum and the maximum values, and the skewness and kurtosis measures. Ln FV is measured with the proxy for Tobin's Q, computed as the sum of the firm's market capitalization and the total liabilities, and then divided by the firm's total assets (Johnson, 2003). The logarithmic transformation of this variable was used to mitigate the risk of a non-normal distribution of the dependent variable. The independent variables used to measure the firm's sustainable scores are the environmental score EScore, the social score SScore, and the government score GScore. $IndexESG1$ represents the average of the three scores. Resource Score reflects a company's performance and capacity to reduce the use of materials, energy, or water, and to find more eco-efficient solutions by improving supply chain management. Emission Reduction Score measures a company's commitment and effectiveness toward reducing environmental emissions in the production and operational processes. Innovation Score reflects a company's capacity to reduce the environmental costs and burdens for its customers, thereby creating new market opportunities through new environmental technologies and processes or eco-designed products. Workforce Score measures a company's effectiveness in job satisfaction and maintaining a healthy, safe, and diverse workplace with equal opportunities and development opportunities for its workforce. Human Rights Category Score measures a company's effectiveness in respecting the fundamental human rights conventions. Community Score measures the company's commitment toward being a good citizen, protecting public health, and respecting business ethics. Product Responsibility Score reflects a company's capacity to produce quality goods and services integrating the customer's health and safety, integrity, and data privacy. Management Score measures a company's commitment and effectiveness towards following best practice corporate governance principles. Shareholders Score measures a company's effectiveness towards equal treatment of shareholders and the use of anti-takeover devices. CSR Strategy Score reflects a company's practices to communicate that it integrates the economic (financial), social, and environmental dimensions into its day-to-day decision-making processes. Policy Water Efficiency Score, Policy Energy Efficiency Score, Policy Sustainable Packaging Score, and Policy Environmental Supply Chain Score incorporate the various forms of processes, mechanisms, and procedures to improve the use of water, energy, sustainable packaging/reducing the use of packaging for products by the company, and policies to include its supply chain in the company's effort to lessen its overall environmental impact, respectively. Firm size $(Size)$ was computed as the natural logarithm of the firm's total assets, and the return on assets (ROA) was used as a measure of the firm's profitability corresponding to the net income over total assets. Leverage (Lev) is computed as the firm's total liabilities over total assets. Capital expenditure $(CAPEX)$ is calculated as the annual growth in the gross property plant and equipment divided by total assets, and the Altman (1968) Z-Score was used as a measure of the company's default risk $(ZScore)$.

Table 10.2 Correlation matrix

	Variables	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*
1	FV	1												
2	LnFV	0.949***	1											
3	EScore	–0.165***	–0.172***	1										
4	SScore	–0.0250	–0.0178	0.668***	1									
5	GScore	–0.0919***	–0.102***	0.374***	0.456***	1								
6	IndexESG1	–0.120***	–0.124***	0.844***	0.858***	0.745***	1							
7	IndexESG2	–0.0800***	–0.0815***	0.853***	0.851***	0.585***	0.936***	1						
8	Size	–0.333***	–0.324***	0.583***	0.559***	0.410***	0.635***	0.627***	1					
9	ROA	0.580***	0.611***	–0.116***	–0.0233	–0.114***	–0.106***	–0.0669**	–0.244***	1				
10	Lev	–0.0532*	–0.0503*	0.0404	0.00741	0.0975***	0.0604**	0.0217	0.227***	–0.230***	1			
11	CAPEX	0.0491*	0.0501*	–0.0367	–0.0431*	–0.0342	–0.0464*	–0.0684**	–0.149***	0.0473*	0.106***	1		
12	ZScore	0.844***	0.810***	–0.206***	–0.0769***	–0.173***	–0.190***	–0.128***	–0.402***	0.596***	–0.417***	0.0723***	1	
13	EconFree	0.220***	0.218***	–0.0707**	–0.0570**	0.0828***	–0.0188	–0.0414	–0.105***	0.153***	0.00494	–0.0318	0.157***	1
14	WGI	0.118***	0.124***	–0.000400	–0.0238	–0.00855	–0.0127	–0.0512*	–0.0590**	0.0942***	–0.0669**	–0.0752***	0.0682**	0.618***

Note: This table presents the bivariate correlations. All variables are defined in Table 10.1.

mitigates any possible autocorrelation problems in the estimations. For space-saving reasons, 14 specific ESG scores have been omitted.

Multivariate Analysis for the Whole Sample

Table 10.3 is split into two panels. Panel A displays the major results that test research hypothesis H1 and considers only the three pillars of the sustainable scores (e.g., *EScore*, *SScore*, and *GScore*) and the two indices of ESG scores (*IndexESG*1 and *IndexESG*2). Panel B, however, just summarizes the findings that were obtained with individual regressions for the other 14 sustainability scores considered in this study. For space-saving reasons, we do not include all the 14 regression outputs but the estimated coefficients of the relevant sustainable score measures only. All regressions satisfy the specification conditions indicated by Arellano and Bond (1991). The GMM estimators are consistent because the z-test denoted as AR (1) reveals the first-order autocorrelation presence, while the AR (2) test rules out the second-order autocorrelation. The Hansen test indicates that the model is instrumentally overidentified. The models use robust variance. Finally, the VIF test supports that the correlations between exogenous regressors do not cause a significant multicollinearity problem.

As observed in Panel A, the three individual sustainability scores (*EScore*, *SScore*, and *GScore*) exhibit coefficients that are positive and statistically significant. This indicates that as any of the three pillars individually increase, they positively impact the firm value. When the three measures are included together in the *IndexESG*1 variable, the results are also positive and statistically significant. Similarly, the aggregated index that considers the 14 individual sustainability scores (*IndexESG*2) also exhibits a positive impact on firm value.

For space-saving purposes, we list the 14 sustainability scores and their corresponding coefficients which were obtained in individual regressions in Panel B of Table 10.3. As observed, in most of the cases the impact of the scores on firm value is positive and statistically significant. However, in four of them, the estimated coefficients are negative and statistically significant (i.e., *InnovationScore*, *ShareholdersScore*, *WaterPolicyScore*, and *PackagingScore*). These variables, indeed, are the ones with the lowest mean values as exhibited in descriptive statistics in Table 10.1. These findings could be explained by life cycle assessment theories (Buxel et al., 2015), which aim to consider the entire lifetime of the sustainability policies. Consequently, investments in sustainability require the disposal of today's company's resources hoping to be capitalized in the long run with enhanced firm value in the future. For instance, Lee and Kim (2017) find a curvilinear relationship between corporate innovation and environmental sustainability, indicating how companies suffer trade-off costs between innovation and environmentally sustainable activities up to a certain point in which trade-off costs will be reduced as the firm accumulates a fair level of innovation. Hence, it might be the case in which these identified corporate sustainable innovations will render positive changes in the firm value in the future, even though they exhibit value dilution in the present. We recognize our partial explanations of the observed negative coefficient for some of the identified scores. In this respect, Tura et al. (2019) reveal how there is a lack of a clear fundamental link in many companies between sustainable knowledge and value management and measurement, and highlight the need to understand the entire knowledge use process and its causal links. Our findings open venues for future research agendas focused on exploring the fundamental link between sustainable initiatives and value creation.

Therefore, we find empirical evidence to support research hypothesis H1 that improvements in the sustainability scores are value-creating activities.

Regarding the firm-level control variables, Table 10.3 displays consistent results that larger firms (*Size*) are less able to generate value. It seems that small firms are more dynamic and can

Table 10.3 Multivariate analysis for the whole sample

	Panel A					*Panel B*	
Variables	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Model 5*		
Size	0.004	–0.011**	–0.011**	–0.010**	–0.009***	ResourceScore	0.073***
	(1.052)	(–2.467)	(–2.085)	(–2.027)	(–5.012)		(8.022)
ROA	1.082***	0.823***	0.897***	0.926***	1.760***	EmissionScore	0.029***
	(20.898)	(18.433)	(22.594)	(25.567)	(196.126)		(2.623)
Lev	1.565***	1.362***	1.702***	1.429***	1.448***	InnovationScore	–0.092***
	(66.090)	(54.703)	(78.499)	(62.450)	(148.518)		(–8.754)
CAPEX	–1.091***	–1.454***	–1.749***	–1.034***	–1.902***	WorkforceScore	0.031***
	(–12.256)	(–12.600)	(–15.358)	(–9.216)	(–32.349)		(2.595)
ZScore	0.046***	0.044***	0.044***	0.043***	0.039***	HRightsScore	0.011**
	(100.331)	(99.787)	(110.445)	(103.045)	(382.498)		(2.147)
EconFree	0.002***	0.003***	0.002***	0.003***	0.000	CommunityScore	0.149***
	(3.126)	(6.388)	(3.377)	(6.134)	(1.029)		(15.134)
WGI	0.500***	0.504***	0.667***	0.469***	0.627***	ProductScore	–0.001
	(9.963)	(9.026)	(12.174)	(9.225)	(25.748)		(–0.221)
EScore	0.052***					ManagementScore	0.039***
	(4.276)						(7.215)
SScore		0.072***				ShareholderScore	–0.016**
		(6.073)					(–2.271)
GScore			0.049***			CSRScore	0.071***
			(6.257)				(7.944)
IndexESG1				0.154***		WaterPolicyScore	–0.022***
				(11.872)			(–5.880)
IndexESG2					0.296***	EnergyPolicyScore	0.196***
					(31.348)		(41.904)
Constant	–1.578***	–1.212***	–1.291***	–1.315***	–1.237***	PackagingScore	–0.053***
	(–14.143)	(–10.034)	(–9.094)	(–11.232)	(–35.114)		(–174.912)
						SupplyChainScore	0.043***
							(8.772)

Observations	2,982	2,982	2,982	2,982	2,129
Number of id	318	318	318	318	225
Country/sector/time effect	YES	YES	YES	YES	YES
VIF test	2.47	3.59	5.01	4.31	4.60
Avrg. Obs./Group	9.377	9.377	9.377	9.377	9.462
AR(1)	–3.645***	–3.657***	–3.570***	–3.665***	–4.106***
AR(2)	–0.564	–0.589	–0.700	–0.768	–0.373
Hansen	252.2	258.5	259.9	261.4	210.9
F–test	7,625***	9,146***	5,971***	4,516***	2,556***

Note: Panels A and B show the regression estimates which explain the effect of the different variables used on the econometric model on Firm Value. First- and second-order autocorrelation tests are reported as AR (1) and AR (2). VIF test is used to formally examine the multicollinearity problem. The Hansen contrast is used to test the hypothesis that the instruments are properly chosen. Standard errors are in parentheses. ***, **, and * represent statistical significance at the 1, 5, and 10% levels, respectively.

adapt quickly to changing market conditions that allow them to generate value. Large firms, however, are mature companies less able to find new markets and take advantage of favorable market conditions. On the other hand, profitability (ROA) and leverage (Lev) have been widely recognized as determinants of firm value. More profitable firms have a greater capacity to attract external investors, which increases the market value of the company. Similarly, leverage is used as a mechanism to exponentially increase the operating capacity of the company to enhance value.

The quality of the country's governance systems (WGI) exhibits a consistent pattern in its relationship with the firm's value-creation activities $(LnFV)$. A similar effect is observed with the economic freedom index $(EconFree)$. Therefore, when countries exhibit a sound regulatory and legal system, and when the economic system guarantees freedoms for the development of productive activities, as a whole, a significant positive impact on the value of companies is observed, ceteris paribus (Table 10.3).

Analysis of the Sample of Companies by Industry and Economic Sector

In this part of the analysis, we split the company sample into those industries that a priori have a significant environmental impact given the nature of their operations from those with relatively low environmental impact. Therefore, following Patten (2002), we consider the following industries as more aggressive with the environment: i) basic materials, ii) energy, iii) industrials, and iv) utilities. The industries with relatively lower environmental impact included i) consumer cyclicals, ii) consumer non-cyclicals, iii) the financial sector, iv) healthcare, v) technology, and vi) telecommunication services, according to the industry classification provided by Thomson Reuters Refinitiv Eikon. These two big groups of industries were used to conduct the estimations to assess the asymmetric impact of sustainable decisions on firm value across industrial sectors.

The most important findings are summarized in Tables 10.4 and 10.5. The tables exhibit that the autocorrelation tests confirm the GMM estimators' consistency, while the Hansen test supports the model overidentification. These models used robust variance, and the VIF test supports that multicollinearity does not systematically affect the model specification.

It is observed in all the models reported in Table 10.4 that the estimated coefficients of *EScore*, *SScore*, *GScore*, *IndexESG*1, and *IndexESG*2 variables are lower for the group of firms that operate in environmentally more aggressive industrial sectors (H Impact, for high impact) than for the group of firms operating in the more environmentally friendly industries (L Impact, for low impact). This indicates, therefore, that there is an asymmetric impact of sustainable measures considered by companies on their firm value that are highly dependent on industry sector. In most of cases, the impact of sustainable innovations on firm value is still positive. However, the firm value is more elastic to little changes in sustainable innovations in environmentally friendly industries (L Impact) than in industries, which by their very nature are more aggressive with the environment (H Impact). These findings indicate that investors reward more significantly those companies that operate in industrial sectors with less environmental impact and with better governance indicators than those companies operating in more aggressive sectors and that exhibit poorly governed systems. Indeed, there is only one finding that exhibits the opposite expected relation: *SScore*. In this case, firm value is destroyed as the social score improves for the group of companies operating in sensitive industry sectors.

Additionally, as a way to provide robustness to our findings, we follow a similar approach and split the company sample based on the economic sector in which the company operates, into either the primary sector, secondary sector, or tertiary sector. The findings observed

Table 10.4 Multivariate analysis by industry

Variables	*H Impact*	*L Impact*	*H Impact*	*L Impact*	*H Impact*	*L Impact*	*H Impact*	*L Impact*	*H Impact*	*L Impact*
Size	–0.029***	–0.009***	–0.025***	–0.021***	–0.025***	–0.016***	–0.030***	–0.054***	0.010	–0.030***
	(–13.553)	(–4.714)	(–11.232)	(–6.795)	(–9.297)	(–6.010)	(–13.533)	(–105.824)	(0.876)	(–13.244)
ROA	0.621***	1.794***	0.409***	1.813***	0.785***	1.211***	0.635***	1.766***	1.394***	2.359***
	(29.444)	(55.425)	(34.811)	(156.955)	(72.333)	(57.324)	(27.772)	(119.695)	(21.129)	(132.974)
Lev	1.587***	1.255***	1.569***	1.121***	1.678***	1.290***	1.535***	1.156***	1.548***	1.105***
	(119.269)	(90.842)	(86.836)	(59.706)	(85.454)	(96.169)	(84.489)	(130.010)	(31.083)	(90.348)
CAPEX	–1.915***	–0.329***	–2.149***	0.369***	–1.541***	–1.128***	–1.657***	–0.556***	–5.038***	–0.034
	(–31.710)	(–6.171)	(–103.189)	(8.800)	(–47.110)	(–48.537)	(–44.418)	(–17.896)	(–23.881)	(–0.982)
ZScore	0.052***	0.035***	0.051***	0.034***	0.047***	0.034***	0.047***	0.033***	0.043***	0.031***
	(243.346)	(181.368)	(232.508)	(233.950)	(230.230)	(187.188)	(131.516)	(255.604)	(34.866)	(380.474)
EconFree	0.003***	0.004***	0.003***	0.004***	0.003***	0.004***	0.004***	0.005***	–0.003**	0.002***
	(11.056)	(15.552)	(9.889)	(70.191)	(14.035)	(50.060)	(20.014)	(31.792)	(–2.089)	(6.114)
WGI	0.418***	0.385***	0.402***	0.442***	0.519***	0.639***	0.412***	0.225***	0.452***	0.483***
	(16.234)	(14.959)	(12.951)	(12.336)	(35.519)	(50.037)	(16.792)	(14.704)	(4.443)	(11.624)
EScore	0.022***	0.057***								
	(3.562)	(11.899)								
SScore			–0.072***	0.157***						
			(–12.446)	(20.435)						
GScore					0.040***	–0.004				
					(13.795)	(–1.288)				
IndexESG1							0.062***	0.123***		
							(9.470)	(40.848)		
IndexESG2									–0.036	0.290***
									(–0.505)	(37.578)
Constant	–0.786***	–1.125***	–0.767***	–0.961***	–0.963***	–1.060***	–0.804***	–0.084***	–0.974***	–0.689***
	(–15.714)	(–22.941)	(–12.651)	(–17.900)	(–18.760)	(–16.200)	(–11.906)	(–14.254)	(–3.668)	(–13.870)
Observations	1,481	1,501	1,481	1,501	1,481	1,501	1,481	1,501	737	1,392
Number of id	154	164	154	164	154	164	154	164	77	148
Country/time effect	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
VIF test	3.91	4.06	5.19	3.18	4.41	5.09	3.12	4.80	5.01	3.77

Table 10.4 (Continued)

Variables	*H Impact*	*L Impact*	*H Impact*	*L Impact*	*H Impact*	*L Impact*	*H Impact*	*L Impact*	*H Impact*	*L Impact*
Avrg. Obs. Group	9.617	9.152	9.617	9.152	9.617	9.152	9.617	9.152	9.571	9.405
AR(1)	–2.289**	–3.551***	–2.216**	–3.637*	–2.405***	–3.541***	–2.388***	–3.763	–2.516**	–4.271***
AR(2)	–0.059	–1.398	–0.994	–1.727	–0.325	–0.737	–0.216	–0.334	–0.378	–1.528
Hansen	970.3	154.2	149.2	261.4	146.9	1375	143.2	700.1	69.42	137.7
F–test	2,956***	2,297***	11,326***	46,207***	17,606***	11,807***	69,683***	42,401***	1,006***	19,816***

Note: This table shows the regression results for the whole sample divided into industries with a high and a low significant environmental impact.

Table 10.5 Multivariate analysis by economic sector

Variables	*Primary*	*Secondary*	*Tertiary*	*Primary*	*Secondary*	*Tertiary*
Size	–0.019***	–0.072***	–0.086***	0.001	–0.040***	0.033**
	(–7.710)	(–11.350)	(–25.734)	(0.105)	(–4.768)	(2.407)
ROA	0.929***	3.544***	0.191***	0.965***	3.567***	0.407***
	(26.133)	(37.209)	(12.376)	(10.681)	(30.996)	(4.685)
Lev	1.288***	1.691***	1.495***	1.542***	1.442***	1.607***
	(54.765)	(30.285)	(97.891)	(32.198)	(30.565)	(27.129)
CAPEX	–1.727***	–1.824***	0.005	–4.907***	–3.108***	–0.944***
	(–16.701)	(–10.892)	(0.078)	(–22.215)	(–16.158)	(–6.884)
ZScore	0.049***	0.034***	0.040***	0.044***	0.028***	0.037***
	(211.223)	(144.741)	(211.288)	(38.476)	(75.081)	(37.394)
EconFree	0.003***	–0.003***	–0.000	–0.003*	–0.001	0.009***
	(12.612)	(–2.965)	(–0.461)	(–1.862)	(–1.269)	(12.568)
WGI	0.416***	0.785***	0.883***	0.642***	0.714***	0.279**
	(6.641)	(10.350)	(17.210)	(10.256)	(7.674)	(2.039)
IndexESG1	0.061***	0.261***	0.767***			
	(7.276)	(9.365)	(34.279)			
IndexESG2				–0.006	0.152***	0.021
				(–0.088)	(3.394)	(0.212)
Constant	–0.979***	0.214	0.044	–0.983***	–0.329*	–2.390***
	(–15.259)	(1.237)	(18.224)	(–4.288)	(–1.719)	(–7.696)
Observations	1,265	1,028	689	737	812	580
Number of id	133	107	78	77	86	62
Country/time effect	YES	YES	YES	YES	YES	YES
VIF test	2.96	3.38	3.58	4.26	4.71	3.09
Avrg. Obs./Group	9.511	9.607	8.833	9.571	9.442	9.355
AR(1)	–2.647***	–3.315***	–1.129***	–2.234**	–3.517***	–1.745**
AR(2)	–4.258	0.0722	–2.652	–2.252	0.718	–2.062
Hansen	148.4	101.3	1907	69.82	78.42	53.57
F–test	194,806***	38,194***	20,101***	4,970***	21,591***	1,621***

Note: This table shows the regression results for the whole sample divided into the three economic sectors: primary, secondary, and tertiary.

in Table 10.5 are consistent with our previous findings. For space-saving reasons, it is only reported in the results of *IndexESG*1 and *IndexESG*2 variables. As observed, the estimated coefficient of *IndexESG*1 variable increases as we move from the primary sector to the tertiary sector. This indicates that companies operating in economic activities that are primarily focused on collecting, extracting, exploiting, or harvesting natural resources exhibit the lowest impact on firm value when sustainable actions are taken. These economic activities involve the production of goods that can be consumed without further production processes, such as commodities and products that cannot be consumed without being processed that are eventually part of the secondary economic sector. The primary economic activity is deeply connected to the earth's natural resources, and, consequently, we would expect this to cause a significant environmental impact on land or water like the agriculture, fishing, or mining industries.

The secondary sector is involved in the conversion of raw materials extracted from the primary activities into finished, manufactured products. The environmental impact of companies operating in the secondary sector is in some specific cases also significant. Nevertheless, by

definition, the environmental impact of the manufacturer is significantly lower than companies operating in the primary sector.

Finally, firms operating in the tertiary sector are engaged in the transfer and distribution of tangible and mostly intangible goods such as healthcare services and educational services. By their very nature and the characteristics of the operating systems of companies in the tertiary sector, their impact on the environment is significantly lower than in any of the other economic sectors. In all the cases, the coefficients are positive and statistically significant as observed in most of the previous findings. However, the responsiveness of the firm value before changes in the environmental, social, and governance score is comparatively higher for companies in the tertiary sector than in the secondary sector, which in turn is greater than for companies operating in the primary sector. Therefore, once again, we observe that the firm's market value is more sensitive to companies' sustainable initiatives in more environmentally friendly industries.

Similar estimations were conducted when *IndexESG2* was used as the explicative variable. In this case, the regression on the secondary sector exhibited a statistically significant estimated coefficient for *IndexESG2*.

Conclusions

Sustainability matters. Our research sheds light on how ESG disclosures are an important driver of firm value creation. Although we found relatively high scores of ESG disclosure for the majority of European firms, our results also show that there is a significant proportion of companies in the sample of outperformers and underperformers, indicating the need for government policies with a clear focus on the enforcement of non-financial disclosure regulations. The European Union is making some progress on this matter. As of February 2022, the Commission adopted a proposal for a directive on corporate sustainability due diligence with the goal of fostering sustainable and responsible corporate behavior.[5] The directive will provide a harmonized legal framework in the EU, creating legal certainty and corporate legitimacy for sustainability. The proposed directive comes in line with the recommendations of the United Nations Secretary-General, Antonio Guterres, who, in his "Common Agenda,"[6] designs and envisions a plan for the future of global cooperation through an inclusive, networked, and effective multilateralism, with a global code of conduct that promotes integrity in public information. We identify a research avenue in the future implementation of the above-mentioned "Corporate sustainability due diligence," by contrasting and studying if the new rules will effectively ensure that businesses address the adverse impacts of their actions. Different institutional legal contexts in Europe and how they affect the enforcement of the regulation will be an interesting area to explore in future research. Sustainability implementation requires a multi-stakeholder approach in which the public and private sectors join forces to develop technological advances and social innovations (Lehner, 2021, p. 201).

Our primary findings indicate that each of the three pillars of sustainability is individually and positively associated with firm value. This finding is robust under alternative metrics of sustainability based on the created composite indices that include either the three pillars together or the alternative 14 different specific sustainability scores used in this study. European markets are valuating positively companies' efforts in developing sustainable strategies along their value chains and are rewarding these companies as our data shows. Nevertheless, discrepancies among companies exist with respect to non-financial disclosures. We recognize the important moment in which the proposed directive takes place and want to acknowledge the relevance of its coming approval. Once the industry effect is considered, the findings show that firms from environmentally friendly industries will see a better response in market perception as a consequence of

improvements in their ESG scores. Likewise, even though the impact for companies operating in sensitive industries, like companies in the primary sector, is not that pronounced, we still observe that ESG disclosure is highly important and a necessary value-creation tool for the business community in support of reaching compliance with the 2030 United Nations Sustainable Development Goals.

Small companies are more agile and can adapt more easily to new market regulations. Big corporations that are more mature and that have more traditional business models will have to use more resources if they want to transition towards more sustainable business models and will have to take on short-term costs that could penalize their value-creation opportunities.

We recommend that policymakers implement measures to help these corporations as they transition to being more sustainable. In particular, resources should be devoted to promoting more sustainable actions in primary economic sectors and those that are known as having more detrimental impacts on the environment. Direct public investment, for instance, could support early research stages by lowering the risk of private financial investments toward more sustainable business models (CISL, 2022).

The European Union is working on regulating and establishing the rules of the game for European corporations in respect of ESG issues. These regulations come because of the necessity of moving from the old model of business as usual into a world where businesses focus on creating and maintaining sustainable business models that protect the planet, people, and corporations. This book chapter shows evidence that supports the work done by the European Union in the promotion of the adoption of ESG disclosure policies at the corporate level as a mechanism of value creation.

We acknowledge that further research is needed to understand the relationship between some of the variables considered in this study and their specific impact on firm value, such as the *InnovationScore*, *ShareholdersScore*, *WaterPolicyScore*, and *PackagingScore*, in which the coefficients were found to be contrary to our expectations. We leave a door open for future research that could bring potential solutions to overcome those challenges and barriers in the business sustainability field. We propose a long-term horizon analysis on the relationship between these variables and firm value creation, as today's investments in sustainability need to be evaluated in a time frame sufficient to estimate the future net cash flows over the life cycle.

We acknowledge that our research is not free of limitations. Our empirical model includes as independent variables, among others, the firm's sustainability scores from the Thomson REFINITIV EIKON data set, which offers a very reliable source of data. Nevertheless, today's approaches to measuring the impact of sustainability are still far from being universally accepted, and as stated by Lehner et al. (2022), the complexity of resolving potentially differing perspectives on key impact measurement issues can generate important avenues for further research.

As our findings evidence, investors reward companies with the best sustainability practices, indicating the beginning of a new way of understanding the way of doing business: creating shared value for the benefit of all stakeholders (Porter & Kramer, 2011).

Notes

1 https://eur–lex.europa.eu/legal–content/EN/TXT/?uri=CELEX:52019DC0640
2 https://virunga.org/
3 https://databank.worldbank.org/source/worldwide–governance–indicators
4 https://www.heritage.org/index/
5 https://ec.europa.eu/info/business–economy–euro/doing–business–eu/corporate–sustainability–due–diligence_en
6 https://www.un.org/en/content/common–agenda–report/#download

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