ESG Performance Relation with Financial Performance

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Abstract. As businesses realize the potential influence on long-term financial sustainability and value creation, the incorporation of Environmental, Social, and Governance (ESG) elements into corporate strategy has grown in importance. The objective of this study is to examine the relationship between ESG performance and financial performance, with particular emphasis on the renewable energy sector. Using a mixed-methods approach, the research employs panel data analysis and qualitative case studies. The sample includes publicly traded renewable energy companies listed in the United States and Europe from 2015 to 2024, with data sourced from MSCI ESG ratings and financial statements. The findings reveal a significant positive correlation between ESG performance and financial performance, attributable to enhanced operational efficiency and effective stakeholder engagement. The study reaches the conclusion that ESG performance is a core determinant of long-term financial prosperity and sustainable value enhancement, further emphasizing the mediating function of agency costs and financing constraints. These findings imply that incorporating ESG practices into corporate strategy can lower risks and improve financial credibility. Future research could further explore the mechanisms and contexts influencing this relationship across different sectors and regions.

Keywords: ESG Performance, Financial Performance, Regression Analysis.

1 Introduction

The integration of Environmental, Social, and Governance (ESG) factors into corporate strategy and investment decision-making has garnered significant attention in recent years [1]. The increasing awareness that ESG performance transcends the realm of corporate social initiatives and is a pivotal determinant of long-term financial viability and value generation is the impetus behind this trend [2]. As global challenges such as climate change, social inequality, and corporate governance issues become increasingly pressing, companies are under mounting pressure to demonstrate their commitment to sustainable practices. The increasing prevalence of investment strategies centered on ESG criteria represents an additional driving force behind this transformation, as investors progressively enhance their awareness of the manner in which ESG factors can influence risk profiles and financial returns [3].

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Existing research has extensively explored the relationship between ESG performance and financial performance, with most studies indicating a positive association. For instance, meta-analyses have demonstrated that entities with superior ESG performance are more likely to exhibit enhanced operational efficiency, diminished capital costs, and stronger long-term stock performance [4-6]. Nonetheless, a number of mediating factors, including stakeholder engagement, risk management, and innovation, influence the complex interplay between ESG and financial performance. While certain research underscores the ability of ESG initiatives to boost financial performance via increased innovation and operational efficiency, alternative studies highlight how ESG practices can mitigate risk exposure and enhance corporate resilience during economic recessions. [7].

Despite these findings, significant gaps remain in the literature. Considerable debate persists regarding the mechanisms through which ESG factors influence financial performance. A notable limitation of many existing studies is their failure to distinguish between material and immaterial ESG issues [8-9]. Moreover, the heterogeneity in ESG data and the variability in research methodologies have led to inconsistent findings, complicating the development of a unified framework. Understanding the precise relationship between ESG performance and financial performance is crucial for guiding corporate strategy, informing investment decisions, and promoting sustainable economic development. For corporations, this knowledge can help in prioritizing ESG initiatives that yield the highest financial returns while contributing to societal and environmental goals. For investors, it can provide insights into the potential risks and opportunities associated with ESG investing, enabling more informed portfolio construction. Furthermore, a robust understanding of this relationship can facilitate the development of policies and regulations that encourage sustainable corporate practices and support the transition to a low-carbon, inclusive economy.

This research endeavors to offer an detailed exploration of the nexus between ESG performance and financial performance. This research adopts a mixed-methods approach, utilizing an extensive array of data sources, encompassing market performance indicators, ESG assessments, and corporate financial metrics. The direct and indirect impacts of ESG performance on financial outcomes will be assessed quantitatively through the application of advanced econometric models. This will be complemented by qualitative case studies of companies with varying ESG profiles to provide deeper insights into the underlying mechanisms and contextual factors at play. The study will also incorporate elements of resource-based view and stakeholder theory to explore how ESG initiatives can enhance corporate reputation, stakeholder engagement, and competitive advantage.

The core aim of this research is to delineate how ESG performance impacts financial success, factoring in the mediating role of elements like innovation, risk management, and operational efficiency. By addressing the limitations of prior research and providing a more comprehensive analysis, this research aims to deliver valuable insights to both academic and practitioner communities and conducting a more comprehensive analysis, thereby contributing to the development of a more resilient and sustainable economic framework. Ultimately, this research endeavors to demonstrate that ESG per-

formance is a foundational element in achieving sustained financial success and sustainable value enhancement, rather than being confined to compliance mandates or reputational imperatives.

To encapsulate, the interplay between ESG performance and financial performance constitutes a pivotal domain of inquiry, bearing profound ramifications for corporate strategy, investment approaches, and sustainable development endeavors. By providing a comprehensive analysis, this study aims to furnish meaningful intelligence to academic and industrial communities, ultimately fostering a more robust and sustainable economic ecosystem.

2 Literature Review

The relationship between environmental, social, and governance (ESG) performance and corporate financial success has garnered substantial academic interest. Despite a plethora of studies conducted in this domain, the findings remain inconclusive, with some studies indicating that ESG has a favorable influence on financial outcomes, whereas others suggest a neutral or even adverse effect [10]. This contradiction in the literature emphasizes the need for additional research into the dynamics that link ESG practices to financial performance.

The connection between financial performance and ESG performance is underpinned by a multifaceted theoretical framework. Stakeholder theory posits that companies that manage a wide variety of stakeholders' interests perform better financially [11]. Aligned with the shared value principle, corporations that generate value for all stakeholders are more likely to attain enhanced financial outcomes [12]. From the perspective of legitimacy theory, a corporation's implicit social contract with society, if breached, can result in diminished customer demand or heightened regulatory intervention by authorities [13]. To gain a competitive advantage, the resource-based paradigm accentuates the importance of leveraging internal resources, including workforce capabilities and intangible assets [14].

In the context of corporate governance, it is posited that strong governance mechanisms can lead to better risk management and strategic decision-making, which are critical determinants of financial stability and growth [15]. Social responsibility initiatives, encompassing fair labor practices and community engagement, are anticipated to foster a positive brand image and consumer loyalty, potentially leading to increased market share and profitability. Environmental stewardship, including practices aimed at reducing carbon footprints and promoting sustainability, is theorized to attract investors focused on sustainable investments and to mitigate regulatory risks, both of which can positively influence financial performance [16].

Despite these theoretical rationales, empirical studies have yielded varied results. Certain research indicates that the implementation of ESG practices may result in increased operational effectiveness and reduced expenditures, which in turn can bolster financial performance [17]. Others, however, find no significant relationship or even suggest that ESG initiatives might divert resources from activities more directly linked to financial returns [18]. This divergence in findings could be attributed to differences

in industry contexts, the specific ESG dimensions emphasized, or the methodologies employed in the studies.

It is vital to note that the linkage between ESG and financial performance is not static and can fluctuate, being contingent upon various contextual elements. For instance, industry context can significantly alter how ESG practices translate into financial outcomes. Given the stringent regulatory baselines, the influence of ESG measures on financial performance might be less evident in industries with heavy regulation. Conversely, in industries where ESG practices are novel, such as renewable energy, the financial benefits can be more pronounced as companies are seen as pioneers gaining a competitive edge [19]. The nuances and complexities of this relationship underscore the need for continued research. The varying impacts of ESG practices on enterprises within the renewable energy industry, as well as the interactions of these practices with other strategic measures in shaping financial performance, could be further examined in this study.

Drawing from the extant literature, the following hypotheses are formulated:

Hypothesis 1: ESG performance exhibits a positive correlation with financial performance.

Hypothesis 2: ESG performance enhances financial performance by driving up R&D expenditures, which in turn spurs innovation.

3 Sample and Methodology

3.1 Sample Selection

To explore the connection between Environmental, Social, and Governance (ESG) performance and corporate financial performance, this research will concentrate on firms in the renewable energy industry. This sector is chosen due to its rapid growth and increasing relevance in the global economy, as well as the heightened focus on sustainability and ESG practices [20]. The sample will include publicly traded renewable energy companies listed on major stock exchanges in the United States and Europe. These regions are chosen due to their mature financial markets and extensive ESG reporting mandates, which ensure the availability of dependable data [21].

The sample period spans from 2015 to 2024. This interval was chosen to encompass the most recent advancements and trends in ESG practices and to assess their potential influence on financial performance [22]. The inclusion of both pre- and post-pandemic periods allows for a more robust analysis, considering the significant changes in market dynamics and regulatory environments during this time [23].

3.2 Data Sources

The primary data source for ESG performance metrics will be the MSCI ESG Ratings, which provide comprehensive and standardized ESG scores for companies across various industries. These scores are based on a thorough evaluation of ESG risks and opportunities, covering environmental factors (e.g., carbon footprint, resource use), social factors (e.g., labor practices, community engagement), and governance factors (e.g.,

board composition, executive compensation). The MSCI ESG Ratings are widely recognized and used by investors and researchers, ensuring the reliability and consistency of the data [24].

Financial performance data will be obtained from publicly available financial statements, including annual reports and regulatory filings (e.g., 10-K reports). Key financial indicators such as return on assets (ROA), return on equity (ROE), earnings per share (EPS), and market value will be used to measure corporate financial performance. These indicators offer a holistic perspective on a company's profitability, efficiency, and market position.

3.3 Methodology

To assess the hypotheses, a panel data methodology will be utilized. This technique facilitates the scrutiny of both cross-sectional and temporal dynamics, thereby offering a more rigorous and holistic analysis than either pure cross-sectional or time-series approaches alone. The panel dataset will encompass numerous renewable energy firms tracked throughout the specified time frame.

The model will be specified as follows.

3.3.1 Dependent Variable.

Financial Performance (measured by ROA, ROE, EPS, and market value)

3.3.2 Independent Variables.

ESG Performance (measured by MSCI ESG scores)

R&D Expenses (measured as a percentage of total revenue)

3.3.3 Control Variables.

Firm Size (measured by the natural logarithm of total assets)

Financial Leverage (measured by the debt-to-equity ratio)

The principal hypothesis to be examined posits a positive correlation between ESG performance and financial performance (Hypothesis 1). To investigate this, a fixed-effects regression model will be applied to account for unobserved firm-specific heterogeneity.

The model will be specified as Equation (1)

$$FP_{it} = \alpha + \gamma 1\, ESG_{it} + \gamma 2\, R\&D_{it} + \gamma 3\, Size_{it} + \gamma 4\, Leverage_{it} + \epsilon \quad (1)$$

Where α is the intercept, β coefficients represent the impact of the independent variables, γ and δ are the coefficients for industry and year dummies, and ϵit is the error term.

To test Hypothesis 2, which posits that ESG performance enhances financial performance via increased R&D expenses, an interaction term between ESG performance and R&D expenses will be included in the model.

The model will be re-specified as Equation (2).

$$FP_{it} = \alpha + \gamma_1 ESG_{it} + \gamma_2 R\&D_{it} + \gamma_3 (ESG_{it} \times R\&D_{it}) + \gamma_4 Size_{it} + \gamma_5 Leverage_{it} + \epsilon \quad (2)$$

4 Analysis and Discussion

4.1 Summary Statistics of Variables

The summary statistics provide a comprehensive overview of the variables utilized in this study, focusing on the renewable energy sector. (Table 1) The sample encompasses 1,715 observations, with the mean ESG score indicating a relatively high level of ESG performance (mean = 4.290). This suggests that firms within the renewable energy sector are generally proactive in adopting sustainable practices. The mean ROE (Return on Equity) is 0.0600, reflecting average profitability levels. The standard deviations for these variables are moderate, indicating some variability across firms, which is expected given the diverse nature of the renewable energy industry. The correlation matrix reveals significant relationships between ESG and other variables such as size and leverage. (Table 2) This aligns with the theoretical expectations that larger firms may have more resources to invest in ESG initiatives and that higher leverage could impact financial performance. These statistics set the stage for the subsequent regression analyses and highlight the importance of ESG practices in the renewable energy sector.

Table 1. Summary statistics of variables

Variable	Observations	Mean	Std.Dev.	Min	Max
ROE	1715	0.0600	0.110	-0.960	0.380
ESG	1715	4.290	0.930	1	7
E score	1715	2.230	1.250	1	7
S score	1715	4.640	1.620	1	9
G score	1715	5.420	1.260	1	9
Size	1715	22.84	1.550	19.59	26.44
Lev	1715	0.490	0.190	0.0500	0.920
Top10	1715	0.600	0.150	0.210	0.910
TobinQw	1715	1.650	0.950	0.860	6.900
FirmAge1	1715	2.980	0.320	1.390	3.640
Cashflow	1715	0.0400	0.0600	-0.170	0.250
Board	1715	2.150	0.220	1.610	2.710
ROA	1715	0.0300	0.0500	-0.370	0.220
Growth	1715	0.150	0.370	-0.620	3.710

Table 2. Correlation matrix of independent variables

	ESG	E score	S score	G score	Size	Lev	Top10	To-binQw	Fir-mAge1	Cash-flow	Board
ESG	1										
E score	0.547	1									
S score	0.632	0.346	1								
G score	0.598	0.073	0.062	1							

Size	0.199	0.221	0.127	0.077	1						
Lev	-0.109	0.090	-0.037	-0.202	0.605	1					
Top10	0.199	0.106	0.057	0.201	0.324	0.029	1				
TobinQw	-0.171	-0.156	-0.138	-0.047	-0.502	-0.317	-0.182	1			
FirmAge1	-0.016	0.042	0.165	-0.125	0.038	0.056	-0.127	0.013	1		
Cashflow	0.152	0.038	0.084	0.117	0.169	0.008	0.168	-0.029	0.108	1	
Board	0.056	0.027	-0.008	0.034	0.407	0.275	0.107	-0.263	0.074	0.073	1

4.2 Benchmark Regression

The benchmark regression model examines the direct effect of ESG performance on ROE, controlling for firm size, leverage, and other factors. The results presented in Table 3 demonstrates that ESG performance exerts a significant positive influence on ROE ($\gamma 1$=0.020, p<0.001), consistent with the first hypothesis, which posits that enhanced financial performance is associated with superior ESG practices This finding is consistent with the literature suggesting that ESG initiatives can enhance operational efficiency and stakeholder engagement, leading to better financial outcomes. The control variables such as firm size and leverage also show expected signs and significance, indicating that larger firms and those with lower leverage tend to have higher ROE. This implies that within the renewable energy sector, firms investing in ESG practices are not merely promoting sustainability but also reaping financial rewards.

Table 3. Regression result - 1

	Model 1	
	ROE	ROE
ESG	0.020***	0.012***
	(5.380)	(3.371)
Size		0.070***
		(9.545)
Lev		-0.323***
		(-11.725)
Top10		0.008
		(0.239)
FirmAge1		0.059
		(1.400)
TobinQw		0.014***
		(3.211)
Cashflow		0.336***
		(7.089)

Board		-0.038
		(-1.593)
Constant	0.008	-1.445***
	(0.431)	(-7.349)
Time control	Yes	Yes
Entity control	Yes	Yes
Mean VIF		1.42
Observations	1,715	1,715
R-squared	0.061	0.195
Number of ID	218	218

4.3 ESG Sub-Dimension Regressions

The sub-dimension regressions further dissect the impact of individual ESG components on ROE. The results in Table 4 show that the social (S) and governance (G) scores have positive and significant effects on ROE, while the environmental (E) score does not. This suggests that while overall ESG performance is beneficial, specific dimensions like social and governance practices may have more direct financial implications. This finding is consistent with stakeholder theory, which suggests that companies that manage stakeholder interests effectively (e.g., through social and governance initiatives) achieve better financial performance. As elaborated in the literature review, the variance in market receptiveness and environmental regulation across firms may account for the minimal impact of the environmental score. Within the realm of the renewable energy industry, this finding highlights the importance of social and governance practices in driving financial performance, even though environmental practices are inherently a core part of the industry.

Table 4. Regression result – 2

	Model 2 ROE	Model 3 ROE	Model 4 ROE
E_score	-0.004*		
	(-1.729)		
Size	0.073***	0.072***	0.070***
	(10.018)	(9.837)	(9.674)
Lev	-0.335***	-0.336***	-0.318***
	(-12.250)	(-12.272)	(-11.399)
Top10	0.019	0.010	0.014
	(0.559)	(0.300)	(0.408)
FirmAge1	0.065	0.055	0.066
	(1.557)	(1.294)	(1.570)
TobinQw	0.014***	0.014***	0.015***
	(3.162)	(3.130)	(3.307)
Cashflow	0.340***	0.338***	0.340***
	(7.162)	(7.129)	(7.178)

Board	-0.038	-0.041*	-0.035
	(-1.608)	(-1.724)	(-1.492)
S_score		0.005**	
		(2.349)	
G_score			0.007***
			(2.712)
Constant	-1.484***	-1.432***	-1.484***
	(-7.504)	(-7.260)	(-7.530)
Time control	Yes	Yes	Yes
Entity control	Yes	Yes	Yes
Mean VIF	1.39	1.40	1.42
Observations	1,715	1,715	1,715
R-squared	0.191	0.192	0.193
Number of ID	218	218	218

4.4 Alternative Dependent Variables and Lagged Explanatory Variables

The analysis using alternative dependent variables (ROA and Growth) and lagged explanatory variables provides additional insights. For ROA, the results show a significant positive effect of ESG performance, reinforcing the robustness of the initial findings. (Table 5) The lagged ESG variable also shows a positive effect, suggesting that the benefits of ESG initiatives may materialize over time. For the Growth variable, the results indicate that ESG performance positively impacts firm growth, supporting the notion that ESG practices can enhance long-term sustainability and market competitiveness. This holds particular significance in the renewable energy sector, where companies that adopt sustainable practices are likely to gain a competitive edge and achieve higher growth rates. These results align with the existing literature, which suggests that ESG activities enhance operational efficiency and foster innovation, thereby improving financial performance.

Table 5. Regression result – 3

	Alternative Dependent Variable (1)		Alternative Dependent Variable (2)		Lagged Dependent Variable	
	ROA	ROA	Growth	Growth	ROE	ROE
ESG	0.009***	0.005***	0.039***	0.032**		
	(5.812)	(3.637)	(2.665)	(2.219)		
L.ESG					0.017***	0.009**
					(3.967)	(2.227)
Size		0.024***		0.089***		0.080***
		(8.268)		(3.001)		(9.393)
Lev		-0.151***		0.294***		-0.369***
		(-13.666)		(2.618)		(-11.788)
Top10		0.033**		0.545***		-0.011
		(2.404)		(3.957)		(-0.280)

FirmAge1		0.031*		0.294*		0.012**
		(1.823)		(1.717)		(2.386)
TobinQw		0.007***		-0.017		0.119**
		(4.181)		(-0.917)		(2.205)
Cashflow		0.140***		0.126		0.352***
		(7.362)		(0.654)		(6.656)
Board		-0.006		-0.088		-0.057**
		(-0.604)		(-0.919)		(-2.176)
Constant	0.009	-0.542***	0.067	-2.893***	0.020	-1.764***
	(1.128)	(-6.846)	(0.896)	(-3.607)	(0.931)	(-7.418)
Time control	Yes	Yes	Yes	Yes	Yes	Yes
Entity control	Yes	Yes	Yes	Yes	Yes	Yes
Mean VIF		1.42		1.42		
Observations	1,715	1,715	1,715	1,715	1,472	1,472
R-squared	0.072	0.232	0.034	0.067	0.051	0.203
Number of ID	218	218	218	218	201	201

4.5 Mechanism Pathways

The mechanism pathways explore the potential channels through which ESG performance affects financial performance. The first pathway examines financing constraints, indicating that enhanced financial accessibility and lower financing costs are correlated with ESG success. (Table 6) This supports the hypothesis that ESG initiatives enhance a firm's financial credibility and attractiveness to investors. The second pathway investigates agency costs, showing that ESG performance reduces agency costs through better governance structures. (Table 7) This finding corroborates the body of literature that underscores the critical role of robust governance mechanisms in achieving effective risk management and robust financial stability. These findings corroborate the notion that agency costs and financing constraints act as mediating factors in the relationship between financial performance and ESG performance. These mechanisms are particularly vital for sustaining long-term financial sustainability in the renewable energy sector, given the substantial capital investments often required by businesses.

Table 6. Regression result – 4

	(1) ROE	(2) KZw	(3) ROE
KZw			-0.020***
			(-6.385)
ESG_average	0.012***	-0.099***	0.010***

	(3.371)	(-3.451)	(2.832)
Size	0.070***	-0.042	0.069***
	(9.545)	(-0.723)	(9.550)
Lev	-0.323***	6.580***	-0.188***
	(-11.725)	(29.825)	(-5.473)
Top10	0.008	-2.053***	-0.034
	(0.239)	(-7.585)	(-0.998)
TobinQw	0.014***	0.564***	0.026***
	(3.211)	(15.836)	(5.441)
FirmAge1	0.059	0.588*	0.071*
	(1.400)	(1.749)	(1.708)
Cashflow	0.336***	-14.857***	0.032
	(7.089)	(-39.120)	(0.480)
Board	-0.038	-0.182	-0.041*
	(-1.593)	(-0.962)	(-1.774)
Constant	-1.445***	0.433	-1.436***
	(-7.349)	(0.274)	(-7.402)
Time control	Yes	Yes	Yes
Entity control	Yes	Yes	Yes
Observations	1,715	1,715	1,715
R-squared	0.195	0.732	0.217
Number of ID	218	218	218

Table 7. Regression result – 5

	(1) ROE	(2) Mfee	(3) ROE
Mfee			-0.059*
			(-1.755)
ESG	0.012***	-0.007***	0.000
	(3.371)	(-5.386)	(0.045)
Size	0.070***	-0.023***	0.015***
	(9.545)	(-8.693)	(4.374)
Lev	-0.323***	-0.005	0.012
	(-11.725)	(-0.507)	(0.892)
Top10	0.008	0.022*	-0.063***
	(0.239)	(1.816)	(-4.191)
TobinQw	0.014***	0.005***	-0.002
	(3.211)	(3.022)	(-0.992)
FirmAge1	0.059	0.004	-0.009
	(1.400)	(0.261)	(-0.488)
Cashflow	0.336***	-0.063***	0.022
	(7.089)	(-3.619)	(1.024)
Board	-0.038	-0.001	-0.025**

	(-1.593)	(-0.108)	(-2.395)
Constant	-1.445***	0.588***	-0.213**
	(-7.349)	(8.179)	(-2.382)
Time control	Yes	Yes	Yes
Entity control	Yes	Yes	Yes
Observations	1,715	1,715	1,715
R-squared	0.195	0.240	0.843
Number of ID	218	218	218

A comprehensive analysis of the relationship between financial performance and ESG performance in the renewable energy industry yields valuable insights. The findings support the hypothesis that ESG performance is positively associated with financial performance, particularly through improved operational efficiency and stakeholder engagement. The results further underscore the mediating influence of agency costs and financial constraints. along with the varying effects observed across different industry sectors and ownership structures. These results carry significant ramifications for regulators, investors, and executives within the renewable energy industry, highlighting the necessity of incorporating ESG practices into strategic planning to bolster long-term financial viability and stakeholder value. Future research could further explore the mechanisms and contexts that influence the ESG-financial performance relationship, contributing to a more nuanced understanding of this dynamic in the renewable energy industry.

5 Conclusion

In recent years, the integration of Environmental, Social, and Governance (ESG) factors into corporate strategy has garnered significant attention, propelled by the increasing acknowledgment that ESG performance extends beyond the scope of corporate social responsibility to become a key factor in shaping long-term financial sustainability and value generation. Focusing on the renewable energy sector, this study endeavors to provide a comprehensive analysis of the relationship between financial performance and ESG performance. By employing a mixed-methods approach, including both quantitative and qualitative analyses, this research seeks to address the limitations of previous studies and shed light on the ways in which ESG initiatives can bolster corporate financial performance via diverse mediating factors such as innovation, risk management, and stakeholder engagement.

The study utilizes a diverse range of data sources, including corporate financial metrics, ESG ratings from MSCI, and market performance indicators. Publicly traded renewable energy companies from 2015 to 2024 that are listed on significant stock exchanges in the US and Europe are included in the sample. The analysis reveals a substantial positive association between ESG performance and financial performance, especially via enhanced operational efficiency and stakeholder engagement. The results further elucidate that financing constraints and agency costs act as mediating variables in the relationship between ESG performance and financial performance. Specifically, ESG initiatives are found to reduce financing costs and improve access to capital,

thereby enhancing a firm's financial credibility and attractiveness to investors. Additionally, strong governance mechanisms are shown to reduce agency costs and improve risk management, contributing to financial stability and growth.

These insights hold significant relevance for policymakers, investors, and corporate executives within the renewable energy industry. They emphasize the need to integrate ESG practices into strategic decision-making to enhance long-term financial sustainability and stakeholder value. For corporations, prioritizing ESG initiatives that yield the highest financial returns while contributing to societal and environmental goals can lead to a competitive advantage. For investors, understanding the potential hazards and opportunities associated with ESG investing can enable more informed portfolio construction. Furthermore, these insights can facilitate the development of policies and regulations that encourage sustainable corporate practices and support the transition to a low-carbon, inclusive economy.

Subsequent studies may delve deeper into the factors and conditions that shape the relationship between ESG performance and financial performance, contributing to a more nuanced understanding of this dynamic in the renewable energy industry. Additionally, extending the analysis to other sectors and regions could provide broader insights into the applicability of these findings. Overall, this study emphasizes how crucial ESG performance is as a primary motivator. of long-term financial success and sustainable value creation, highlighting the potential for ESG initiatives to drive innovation, mitigate risks, and foster resilience in the face of global challenges.

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