Do Corporate Cash Holdings Matter for ESG Performance? Empirical Evidence from India

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Abstract

Purpose : The study investigated the relationship between a firm's cash holdings and its ESG performance, recognizing environmental, social, and governance (ESG) as a driver of long-term value creation.

Methodology : The study examined a sample of 98 Indian firms listed on the National Stock Exchange over six years (2017–2022). We employed panel data analysis using pooled ordinary least squares, random effects, and fixed effects models. The Lagrange multiplier and Hausman tests were used to determine the appropriate panel data model, which validated our approach.

Findings : Our results showed a positive association between cash holdings and overall ESG scores as well as ESG pillar scores. Robust cash flow also enabled firms to allocate resources to ESG activities, with cash holdings having a similar positive impact on all three ESG dimensions.

Practical Implications : Even if there were no obvious immediate financial gains, companies with larger cash holdings could invest in ESG projects and improve long-term ESG performance.

Originality : The study extended earlier research on ESG practices by offering new evidence that cash holdings improved ESG performance.

Keywords : **ESG performance, cash holdings, Indian firms, precautionary motive, slack resource theory**

JEL Classification Codes : G30, G32, G39

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Financial institutions and equity investors push business firms toward long-term sustainability rather than a quarter-by-quarter concentration under the environmental, social, and governance (ESG) movement. ESG practices are now considered to be the cornerstones of promoting worldwide sustainable company operations. Although implementing ESG principles may increase short-term costs for businesses and reduce revenues, these policies are thought to have long-term benefits (Cappucci, 2018). Several studies have focused on the importance of ESG integration in the firm's long-term value creation (Lahouel et al., 2022) and financial performance (Nollet et al., 2016). Garcia and Orsato (2020) found a statistically significant positive correlation between business financial performance and ESG factors.

Additionally, research evaluating the impact of ESG on firm profitability, return on assets, and overall financial performance demonstrated a positive correlation, enhancing growth prospects with a decreased default

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risk among ESG practices in firms (Brantley et al., 2014; Chen & Xie, 2022; de la Fuente et al., 2022; Li et al., 2022; Velte, 2017). Subsequently, studies also reported the dependence of ESG voluntary disclosures on corporate characteristics such as size, profitability, and composition of the board (Verbeeten et al., 2016). Even if ESG is becoming more and more popular, research on the critical elements that allow a company to embrace and succeed in ESG practices and eventually enhance its overall ESG performance is noticeably lacking (Tsang et al., 2023). The firm's cash holdings will have a significant impact on its ESG performance because ESG integration necessitates a long-term commitment of firm resources (Cappucci, 2018). A large portion of the wealth and assets of a company are made up of cash holdings, and the management is primarily responsible for deciding how to use this cash.

John et al. (2017) highlighted the agency problems associated with high and low cash holdings levels. According to their theory, surplus cash holdings are not as closely watched by the capital markets as external funds, giving the self-serving management more freedom to profit personally at the expense of the larger shareholders (Jensen, 1986). Therefore, high levels of cash holdings can be associated with increased agency costs. In contrast, external financing is more expensive and restrictive under imperfect market conditions than internal financing (Myers & Majluf, 1984). Thus, in such market situations, a high level of cash holdings can shield against economic uncertainty, whereas a low level of cash holdings can risk shareholder interest. Since ESG integration requires a long-term commitment of firm resources, we propose that cash holdings are an important determinant of a firm's ESG performance. Our key explanatory variable represents the cash holdings, while we use several relevant firm-level control variables such as cash flows, firm size, analyst coverage, strategic holdings, firm age, and specific board characteristics. Roy (2022) reported that besides major corporate investment decisions, a firm's cash holdings do matter for its dividend policies.

First, information was gathered over six years from the leading 500 companies listed on the National Stock Exchange (NSE) of India using Refinitiv Eikon's (previously Thomson Reuters) database. Only 98 of the 410 companies have ESG scores available for six years. Further investigation was carried out on 98 organizations, using data on cash holdings, firm-level control factors, and the environment (E), social (S), and governance (G) pillar scores. Regression analysis on panel data is used to investigate how cash holdings affect overall ESG performance. The results show that cash holdings positively correlate with the aggregate ESG scores and the ESG pillar scores. Apart from the primary explanatory factor, cash flow—a statistic that signifies a company's improved financial standing—significantly positively impacts both the overall ESG performance and its pillar scores, E, S, and G. Additionally, there is a strong size bias in favor of ESG performance. All the metrics of ESG performance are adversely affected by analyst coverage, which acts as a stand-in for lessening information asymmetry. Furthermore, companies that are just getting started are probably going to do better in terms of environmental sustainability, and ownership concentration has a detrimental impact on that performance.

This research offers significant contributions to both theoretical and practical understanding. First, as one of the factors influencing business ESG practices and one of its pillars, cash holdings are the subject of an expansion in this research report. Second, we investigate how cash holdings affect ESG performance and the ratings of its component pillars, in contrast to earlier research. Third, we explore the inconsistencies among ESG pillar scores and the variation in their determinants. Fourth, our results offer insightful information on how cash holdings affect a company's ESG performance, which has practical significance for Indian listed firms in light of the recent regulatory changes, particularly the SEBI's BRSR standards.

Literature Review and Hypotheses Development

A growing number of stakeholders are becoming interested in ESG, and regulations promoting ESG practices are driving an exponential expansion in research in this field. The academic literature in this field is valuable for

stakeholders seeking significant insights from ESG practices. Studies have also articulated a substantial impact of environmental, social, and governance performance on the firm's economic vitality, measured by various parameters.

In the context of environmental performance, for example, research has shown that companies incorporated in developed countries that engage in environmentally sustainable practices see improvements in their financial performance as determined by return on equity and return on assets (Lee et al., 2016; Sandberg et al., 2023). Moreover, these firms secured debt at a lower cost (Erragragui, 2018) and experienced a reduction in overall risk (Meles et al., 2023) compared to their counterparts. Studies on social practice have covered topics such as free cash flow globally (Gregory, 2022) and rising equity costs (Wang et al., 2021) for businesses in East Asia. On the other hand, as social performance increased, there was a decrease in the stock price crash of South Korean companies (Bae et al., 2021), cash holdings of companies incorporated in developed countries (AlHares et al., 2023), and overall market risk (Hassan et al., 2021). It is interesting to note that increased return on equity for European companies has been associated with improved governance standards (Sandberg et al., 2023).

A different series of research exhibited the elements that enhanced ESG practices and their foundations. Zhang et al. (2020) reported that cash holdings significantly contributed to Chinese firms' investment in pollution control (environmental practice). Li et al. (2023) found a significant positive association between the cash flow of Chinese firms and their commitment to ESG practices; however, multiple shareholders had a negative impact on these practices (Wang et al., 2023). On a global scale, firm size (Hasan & Habib, 2017) and analyst coverage positively impacted ESG practices and their pillars (Baldini et al., 2018). Shahbaz et al. (2020) reported that, globally, the board independence of energy firms positively impacted ESG practices and governance practices. However, the study indicated no significant impact on environmental and social practices. The factors influencing ESG research in emerging markets were mostly irregular. Malhotra and Baag (2022) explored the factors affecting the sustainability of Indian microfinance firms. Joshi and Joshi (2024) reported financial determinants of ESG practices for Indian firms.

Academic literature on ESG possesses two strands: the impact of ESG performance on a firm's financial performance and factors impacting ESG performance. However, our analysis mostly focuses on this strand because there is a dearth of literature on the factors that drive ESG performance (Tsang et al., 2023). Furthermore, most of the studies under the second strand were conducted in the context of the USA and China. Under Section 135 of the Companies Act 2013, India is the first developing nation to impose corporate social responsibilities, which include companies' environmental and social policies. Section 135 introduced mandatory provisions for appointing independent directors and women directors to the board to enhance the governance mechanism. Diversity on boards has been found to positively impact governance procedures (Melón-Izco et al., 2020).

Moreover, Indian firms present a distinctive case for exploring this specific strand due to its prevalence of family controlled firms, setting it apart from the primarily state-owned firms in the countries mentioned above (Joshi, 2022). The effect of cash holdings on ESG performance has not received much attention from academics despite the fact that a small number of studies have examined this relationship (Atif et al., 2022; He et al., 2023; Liu et al., 2023; Wong & Zhang, 2024). As a source of liquidity and flexibility for risk management and decision-making, cash holdings can have an impact on the firm's plans. For these reasons, we are investigating the impact of cash holdings on ESG performance and its pillars for Indian enterprises.

The slack resource theory states that companies can use resources at their discretion if they have a specific level of financial, managerial, or technical slack (Xiao et al., 2018). A firm's financial slack encompasses its cash holdings or reserves (Myers & Majluf, 1984), not used for a specific purpose. Companies maintained a certain amount of cash reserves for unforeseen circumstances since they were acting as a precaution (Joshi, 2021; Opler et al., 1999). C.C. Smith (2014) and Joshi (2022) reported that firms with more extensive cash holdings generated positive abnormal returns during uncertain periods. Consequently, firms with higher cash holdings can sustain

periods of economic shock. The presence of cash holdings allows a firm to compete and afford to invest in different strategies, such as performing environmental and social practices. Better cash holdings allow businesses to invest in ESG practices because they can support themselves going forward. Based on the above discussion, we propose the following hypotheses:

- **Ha1 :** There is a positive association between cash holdings and environmental performance.
- **Ha2 :** There is a positive association between cash holdings and social performance.

A firm's governance performance consists of board gender diversity, board independence, CEO chairman duality, and beyond that, which helps to enhance the governance mechanism of a firm (Melón-Izco et al., 2020). A board with an effective governance structure responsible for assessing and managing risk aligns with effective management, law, and regulations. Moreover, governance factors are significant for implementing risk management policies and practices. A company's ability to reduce its exposure to exogenous and endogenous shocks can be attributed to its improved governance (Mather et al., 2021). Since the precautionary cash holdings act as a hedging tool against the risk, and the policies were formulated due to a robust governance mechanism, we proposed the following hypothesis:

- **Ha3 :** There is a positive association between cash holdings and governance performance.

The ESG performance is the composition of individual environmental, social, and governance performance. Firms that are better in all three practices had better ESG performance than their counterparts. Furthermore, the correlation between ESG practices and firm performance is not linear; rather, it takes the form of a U-shaped curve that shows a decline in ESG integration at first, a valley of low returns, and then an improvement in firm performance that surpasses the performance level prior to ESG integration (Cappucci, 2018). Consequently, a company's prudent cash holdings are crucial to its ESG performance. Therefore, we propose the following hypothesis:

- **Ha4 :** There is a positive association between cash holdings and ESG performance.

Research Methodology

Sampling

Data were collected from the Refinitiv Eikon database (formerly Thomson Reuters) over six years, i.e., 2017–2022, to establish the causal relationship between the firms' cash holdings and their ESG performance for Indian firms. In ESG research and analysis, Refinitiv has been used extensively (Apergis et al., 2022; Amiraslani et al., 2023; Gregory, 2022; Shahbaz et al., 2020). Our initial data set comprised of the top 500 companies listed on the NSE, India, in terms of market capitalization. SEBI mandated Business Responsibility Reporting (BRR) for the top 100 listed companies by market capitalization in 2012. This requirement was later expanded to include the top 1,000 companies in 2019.

Additionally, in 2017, the regulatory body introduced the option for the top 500 companies to adopt integrated reporting (Mitra, no date) voluntarily. We have information for 403 firms since we did not include companies that were incorporated in the financial industry because of the disparate reporting requirements. Subsequently, we exclude firms with the missing value of an explanatory variable, ESG and its pillars scores, and associated control variables. Finally, there were 98 ESG firms with complete data spanning six years, ensuring a completely balanced panel dataset.

Variable Description

Dependent and Independent Variables

We employed scores that were directly retrieved from Refinitiv for the dependent variables in our study, which were ESG, E, S, and G performance. Refinitiv scores have been predominantly used in major research studies (Apergis et al., 2022; Barros et al., 2023; Hassan et al., 2023; Shahbaz et al., 2020) focusing on ESG performance. We have computed our primary explanatory variable, cash holdings, which is explained in Table 1.

Control Variables

We control for a set of variables that, theoretically, affect the ESG performance and its pillars. First, cash flow positively impacts ESG practices by providing liquidity of financial resources that can be used to perform environmental and social practices (Li et al., 2023). Second, firm size can impact ESG practices. As larger firms experience more scrutiny from stakeholders and regulators, it necessitates a more robust commitment to ESG principles. Third is analyst coverage, which impacts ESG performance because of increased stakeholder visibility and attention to ESG transparency. The fourth control variable is strategic holdings. Many significant shareholders make a company's ESG practices worse because they can conspire against the company and bear the financial burden of unethical ESG practices (Wang et al., 2023). The fifth point is that firm age is taken into account as a control variable, recognizing that established companies have the resources necessary to successfully apply ESG principles. Sixth, we took diversity on the board into account since it has been linked to enhanced risk management, more innovation, and better decision-making—all of which are important components that drive ESG performance. Seventh is board independence, which positively impacts the ESG practices of firms globally because independent directors face less pressure from stakeholders than their other board members (Shahbaz et al., 2020; Uyar et al., 2022). Finally, we control for board duality as it is known to decrease checks and balances in decision-making, leading to a less deliberate decision-making process. Table 1 represents the description or calculation of the explanatory and control variables.

Table 1. ***Variables and Their Symbols and Description***

S. No.	Variables	Symbol	Type	Description or Calculation
1	Cash Holdings	*CH*	Explanatory Variable	Cash plus short-term investments, all divided by the total assets.
2	Cash Flow	*CF*	Control Variable	EBDITA divided by the total assets.
3	Firm Size	*SZ*	Control Variable	Natural logarithm of the total assets of a firm.
4	Analyst Coverage	*AC*	Control Variable	Number of analysts.
5	Strategic Holdings	*SH*	Control Variable	One minus percent of free float shares.
6	Firm Age	*AG*	Control Variable	Year of Incorporation – 2022.
7	Board Diversity	*BG*	Control Variable	The ratio of women on board to board size.
8	Board Independence	*BI*	Control Variable	The ratio of independent directors to board size.
9	Board Duality	*BD*	Control Variable	Whether the CEO and Chairman of a firm are the same, if yes, then 1; otherwise, 0.

Model Specification (Panel Data Regression)

This study utilizes panel data regression analysis to investigate the relationship between firms' ESG, E, S, and G scores and their cash holdings, while controlling for other firm-level variables that may influence this relationship.

To determine the most suitable regression model for our dataset, we employ the Lagrange multiplier (LM) test to assess the appropriateness of pooled ordinary least squares (OLS) and random effects. Additionally, Hausman tests are performed to determine if fixed or random effects better fit our dataset.

Panel regression equations for OLS, random, and fixed effects.

$$ESG_{i,t} = \alpha_1 + \beta_1 CH_{i,t} + \sum_{j=1\ to\ n} CV_{i,t} + \varepsilon_i \quad (1)$$

$$E\ Score_{i,t} = \alpha_1 + \beta_1 CH_{i,t} + \sum_{j=1\ to\ n} CV_{i,t} + \varepsilon_i \quad (2)$$

$$S\ Score_{i,t} = \alpha_1 + \beta_1 CH_{i,t} + \sum_{j=1\ to\ n} CV_{i,t} + \varepsilon_i \quad (3)$$

$$G\ Score_{i,t} = \alpha_1 + \beta_1 CH_{i,t} + \sum_{j=1\ to\ n} CV_{i,t} + \varepsilon_i \quad (4)$$

where,
A = Intercept,
β = Coefficient of explanatory variables,
CH = Cash holdings (explanatory variables),
CV = Control variables,
ε = Error term.

Analysis and Results

Descriptive Statistics

The descriptive statistics for dependent, explanatory, and control variables are presented in Table 2. The average ESG score is 39.0214, with a standard deviation of 28.2570, suggesting significant variation in the ESG scores of our sample firms. The average of ESG's pillar scores depicts that Indian firms have better social performance than environmental and governance performance. The sampled firms have an average cash holding to the total assets of 16.15%, with a minimum of 0.02%. The firm has an average age of 47.27 years, with a minimum of 1 year and a maximum of 118 years. Its average number of analysts covering the firms is 11, and its percentage of strategic

Table 2. ***Descriptive Statistics***

Variables	Mean	Median	Standard Deviation	Minimum	Maximum
ESG	39.0214	44.6180	28.2570	0.000	92.7483
E	33.6283	32.3702	29.0330	0.000	94.1445
S	43.0210	46.0353	32.1071	0.000	96.7496
G	36.8487	36.6619	29.4709	0.000	96.7001
CH	0.1615	0.1200	0.1274	0.0002	0.7505
CF	0.1617	0.1443	0.0948	–0.0273	0.8680
SZ	25.9568	25.6796	1.3857	22.6342	29.7307
AC	11.0421	1.0000	13.5684	0.0000	47.0000
SH	0.5721	0.5680	0.1578	0.0416	0.9248
FA (in years)	47.27	41	23.714	1	118
BG	0.1118	0.1000	0.0926	0.0000	0.5000
BI	0.3692	0.3044	0.3222	0	0.9956
BD	0.2872	0.0000	0.4528	0	1

holdings, which represents the higher promoter's holdings, is 57.21%. Moving to the board structure, certain firms exhibit no women or independent directors on their boards, with the maximum presence of 50% women directors and 99% independent directors. In addition, our sample includes companies whose CEOs also hold different functions from those of chairmen. Interestingly, this wide range of descriptive statistics sheds light on the distribution and properties of the variables we are analyzing.

Correlation Matrix Description

Table 3 shows a correlation between the ESG scores, its pillars, explanatory variables, and other variables used as control variables. There is a negative correlation between ESG score and strategic holdings, while a positive correlation exists with all other variables. Interestingly, each pillar's correlation with the firm-level variables is inconsistent. For instance, cash flow correlates negatively with environmental scores but positively with ESG, social, and governance scores. Similarly, strategic holdings negatively correlate with ESG, environmental, and governance scores but positively correlated with social scores. There is a positive correlation between the environmental, social, and governance pillars; however, the relationship between the environment and social pillars is stronger than the relationship between the environment and governance pillars. Moreover, for the sample firms, there is a negative correlation between cash holdings and firm size, gender diversity on the board, and strategic holdings.

Table 3. ***Correlation Matrix***

	ESG	E	S	G	CH	CF	SZ	AC	SH	FA	BG	BI	BD
ESG	1.00												
E	0.92*	1.00											
S	0.96*	0.88*	1.00										
G	0.82*	0.62*	0.69*	1.00									
CH	0.11*	0.06*	0.09*	0.15*	1.00								
CF	0.02	–0.04	0.01	0.10*	0.32*	1.00							
SZ	0.56*	0.63*	0.59*	0.28*	–0.09*	–0.34*	1.00						
AC	0.29*	0.27*	0.27*	0.25*	0.08*	0.10*	0.15*	1.00					
SH	–0.06	–0.07	0.01	–0.12*	0.09*	0.02	–0.08	–0.13*	1.00				
FA	0.04	0.13*	0.04	–0.06	–0.05	–0.04	0.12*	–0.07	–0.22*	1.00			
BG	0.25*	0.14*	0.21*	0.33*	–0.02	–0.01	0.12*	–0.18*	–0.02	–0.10*	1.00		
BI	0.30*	0.21*	0.22*	0.43*	0.10*	0.19*	0.05	0.02	–0.15*	–0.01	0.52*	1.00	
BD	0.31*	0.36*	0.34*	0.09*	0.09*	0.09*	0.36*	–0.01	0.03	–0.03	0.12	0.21*	1.00

Note. * represents the significance level at 5%.

Cash Holdings and ESG Performance

Tables 4–7 display the panel regression results for ESG and its pillar scores using pooled OLS, random effects, and fixed effects models. Furthermore, we used the LM test and the Hausman test for model validation. *, **, *** represent the significance levels at 10, 5, and 1%, respectively.

The findings of the panel regression analysis, which regresses the dependent variable, ESG scores, on the independent variable, cash holdings, to investigate the link between the two, are shown in Table 4. A strong and positive statistically significant coefficient of cash holdings indicates that maintaining a higher level of cash

Table 4. ***ESG Scores' Regression on Cash Holdings and Controls, Using Pooled, Random, and Fixed Effects Models***

	Pooled Cross-Section	Random Effect	Fixed Effect
Cash Holdings	20.2872**	20.7622**	27.3346***
	(2.42)	(2.48)	(3.10)
Cash Flow	54.9058***	55.3977***	26.6642**
	(4.42)	(4.48)	(1.86)
Firm Size	13.4154***	13.0978***	7.6914***
	(10.01)	(10.65)	(2.87)
Analyst Coverage	0.2175***	0.2434***	–0.2260***
	(4.19)	(4.58)	(–3.74)
Strategic Holdings	–18.2687**	–15.1708*	–11.5233
	(–2.04)	(–1.79)	(0.93)
Firm Age	–0.1216	–0.0972	–5.3809***
	(–1.58)	(–1.33)	(–8.51)
Board Diversity	–2.7823	0.3543	28.7348**
	(–0.25)	(0.03)	(2.33)
Board Independence	–2.2088	–1.8311	–7.1824**
	(–0.99)	(–0.54)	(–2.12)
Board Duality	1.9398	2.002	1.0872
	(0.74)	(0.77)	(0.38)
Intercept	–206.8841***	–303.2973***	93.1644
	(–8.55)	(–9.21)	(1.09)
R-Square		0.3960	0.0000
LM test		306.92	
		(0.0000)	
Hausman test			0.49
			(1.000)
Number of Observations	588	588	588
Number of Groups	98	98	98

Note(s). *z*-statistics are reported in parenthesis. *, **, *** show significance at 10%, 5%, and 1%, respectively.

supports the ESG performance of the firm. Furthermore, the LM test and Hausman test support the fixed effect model of panel regression.

In addition to its cash holdings, the company has strong cash flows, which improve its ESG performance. Moreover, board gender diversity and business size have a beneficial impact on ESG performance. Contrarily, strategic holdings, firm age, analysts' coverage, and board independence report statistically significant negative coefficients that indicate the adverse impact of promoter holding, mature firms, better analysts' coverage, and high independence in the board on a firm's ESG performance, respectively.

The results of the panel regression analysis for the environment pillar scores are presented in Table 5. LM test and Hausman test support the fixed effect model; hence, similar to the overall ESG performance, a firm's cash

Table 5. ***E Scores' Regression on Cash Holdings and Controls, Using Pooled, Random, and Fixed Effects Models***

	Pooled Cross-Section	Random Effect	Fixed Effect
Cash Holdings	10.3502	10.4178	16.0259**
	(1.27)	(1.27)	(1.83)
Cash Flow	57.7945***	57.686***	34.5428**
	(4.77)	(4.73)	(2.42)
Firm Size	13.7861***	56.686***	6.6292**
	(10.73)	(10.73)	(2.49)
Analyst Coverage	0.2361***	0.2379***	–1.1774**
	(4.65)	(4.63)	(–2.51)
Strategic Holdings	–13.8424	–13.5754	–7.7324
	(–1.60)	(–1.57)	(–0.46)
Firm Age	–0.0025	0.0007	–4.8411***
	(–0.03)	(0.01)	(–7.70)
Board Diversity	–9.9024	–9.7241	20.6772*
	(–0.90)	(–0.87)	(1.69)
Board Independence	–2.0873	–2.002	–4.0367
	(–0.64)	(–0.61)	(–1.20)
Board Duality	5.0354**	5.0742**	2.7826
	(1.97)	(1.97)	(0.98)
Intercept		–329.5686***	85.8644
		(–9.59)	(1.01)
R-Square		0.4587	0.0800
LM test		436.55	
		(0.0000)	
Hausman test			55.90
			(0.0000)
Number of Observations	588	588	588
Number of Groups	98	98	98

Note(s). *z*-statistics are reported in parenthesis. *, **, *** show significance at 10%, 5%, and 1%, respectively.

Table 6. ***S Scores' Regression on Cash Holdings and Controls, Using Pooled, Random, and Fixed Effects Models***

	Pooled Cross-Section	Random Effect	Fixed Effect
Cash Holdings	12.4154	12.8902	19.6474***
	(1.31)	(1.35)	(1.95)
Cash Flow	63.8541***	64.6260***	26.0679**
	(4.53)	(4.59)	(2.59)
Firm Size	15.5781***	15.4142***	8.0944***
	(10.46)	(10.83)	(2.65)

Analyst Coverage	0.2517***	0.2669***	–0.3074***
	(4.25)	(4.43)	(–3.79)
Strategic Holdings	–13.2921	–10.3041	–17.6038
	(–1.33)	(–1.06)	(–1.24)
Firm Age	–0.1400	–0.1164	–6.3008***
	(–1.53)	(–1.36)	(–8.74)
Board Diversity	–1.4106	0.4548	36.1882**
	(–0.11)	(0.03)	(1.95)
Board Independence	–5.6699	0.4548	–8.2543**
	(–1.49)	(0.03)	(–2.13)
Board Duality	3.6297	3.8256	1.4570
	(1.22)	(1.29)	(0.45)
Intercept	–361.8674***	–361.2034***	134.5178
	(–9.07)	(–9.48)	(1.38)
R-Square		0.4159	0.0000
LM test		338.59	
		(0.0000)	
Hausman Test			29.61
			(0.0005)
Number of Observations	588	588	588
Number of Groups	98	98	98

Note(s). *z*-statistics are reported in parenthesis. *, **, *** show significance at 10%, 5%, and 1%, respectively.

holdings positively impact its environmental performance. The beneficial impact of cash flow, firm size, and board diversity on the environmental performance of the company is demonstrated by statistically significant positive coefficients of each of these variables. According to the findings for the overall ESG performance, a firm's environmental performance is negatively impacted by its age, analysts' coverage, and strategic holdings.

Table 6 presents the findings that indicate the influence of cash holdings and other firm-level control variables on social pillar scores. Consistent with the results for overall ESG and E scores, cash holdings positively influence the firm's social performance. Additionally, the positive influence of cash flow, asset intangibility, business size, and dividend yield on a firm's social performance is demonstrated by statistically significant positive coefficients

Table 7. ***G Scores' Regression on Cash Holdings and Controls, Using Pooled, Random, and Fixed Effects Models***

	Pooled Cross-Section	Fixed Effect	Random Effect
Cash Holdings	38.5070***	38.2434***	45.6206***
	(3.95)	(3.92)	(4.37)
Cash Flow	37.2017**	40.0951***	13.8661
	(2.56)	(2.80)	(0.82)
Firm Size	9.4025***	8.6066***	6.2487**

	(5.78)	(6.32)	(1.97)
Analyst Coverage	0.1189**	0.1856***	–0.3111***
	(1.98)	(2.94)	(–3.69)
Strategic Holdings	–25.6156**	–13.6943**	–7.4952
	(–2.40)	(–2.49)	(–0.51)
Firm Age	–0.2562**	–0.1979**	–4.6122***
	(–2.48)	(–2.50)	(–6.16)
Board Diversity	–1.9260	7.0002	21.4766
	(–0.15)	(0.52)	(1.47)
Board Independence	–1.9159	3.8180	–8.9198**
	(–0.50)	(0.96)	(2.22)
Board Duality	–2.3527	–3.8975	–0.2766
	(–0.77)	(–1.29)	(–0.08)
Intercept	–192.7431***	–179.7163***	92.0272
	(–4.42)	(–4.93)	(0.91)
R-Square		0.2252	
LM test		242.95	
		(0.0000)	
Hausman Test			107.05
			(0.000)
Number of Observations	588	588	588
Number of Groups	98	98	98

Note(s). *z*-statistics are reported in parenthesis. *, **, *** show significance at 10%, 5%, and 1%, respectively.

of these variables. The corporate social performance of mature enterprises is negatively impacted by the statistically significant negative coefficient of firm age.

The results displayed in Table 7 illustrate how cash holdings and other firm-level control elements impact governance pillar ratings. Cash holdings have a statistically significant beneficial impact on the firm's governance performance, which is consistent with the overall ESG performance findings and its other two components, E and S. Firm size shows statistically significant positive coefficients, indicating its beneficial influence on the firm's governance performance, in addition to cash holdings. In line with the results of ESG, E, and S scores, analyst coverage and firm age significantly adversely impact a firm's governance performance.

Discussion and Conclusion

The findings confirm that cash holdings have a positive impact on the individual components of ESG performance as well as overall ESG performance, which supports the acceptance of hypotheses Ha1 through Ha4. In order to support the firm through the U-shaped journey of ESG integration and firm performance, the integration of ESG activities necessitates a long-term commitment of the firm's resources and cash holdings. Precautionary corporate cash holdings provide a cushion against external economic shocks and reduce their adverse effect on a firm's operations and cash flows (Joshi, 2022). Therefore, companies that have stabilized their cash flows and operations

are in a better position to move forward with long-term non-financial commitments like ESG integration. The significance of cash holdings increases in emerging markets that have somewhat poor conditions in the capital market. Under imperfect capital market conditions, external financing is more expensive and restrictive, and firms rely on their internal funds for the allocation towards ESG integration. As for the three different pillars of ESG, our findings show that cash holdings significantly positively correlate with the ecological, social, and governance pillars.

Investment in these pillar score aspects requires a long-term commitment of resources, and a growing number of stakeholders, including ESG investors, are evaluating a firm's success in these dimensions. To illustrate, three critical dimensions of the environment pillar score, namely, resource use, emissions, and eco-innovations, require considerable investment in new technologies to reduce a fraction of non-renewable resources. These investments are costly and might not generate returns for the shareholders in the short term. However, a non-committal approach toward these dimensions can irk the other stakeholders and expose the firms to environmental risks and incompatibility sanctions imposed by the regulators (Uyar et al., 2022). Similarly, investing in key aspects of the social pillar score, such as workforce development, human rights, community development, and product responsibility, may not yield short-term returns for shareholders. However, neglecting these areas may compromise the firm's legitimacy and expose it to social risks. Likewise, the governance pillar score's key dimensions, including management, shareholder interests, and CSR strategy, require striking a balance between the interests of shareholders and other stakeholders.

Consequently, the findings of our analysis are consistent with other research (Xiao et al., 2018; Zhang et al., 2020), which found that companies with cash holdings are more likely than those with smaller cash holdings to adhere to the ESG criteria. We have controlled other firm characteristics such as cash flow, firm size, analyst coverage, strategic holdings, firm age, board gender diversity, board independence, and CEO-Chairman duality, which largely influence the firm's ESG performance. Strong cash flow, like cash holdings, allows the company to devote resources to ESG initiatives. Baldini et al. (2018) and Uyar et al. (2022) confirmed significant size bias for the firm's ESG performance. The statistically significant negative coefficient of the analyst coverage confirms that fewer analysts need to cover the firms in the presence of higher cash holdings. This link suggests that there is less of a need for analysts to close the information gap as there is a decrease in information asymmetry between insiders and outsiders of the company. As a result, these companies with larger cash holdings are better equipped to meet the stakeholders' requirements for legitimacy.

A long-term view is undoubtedly brought about by ownership concentration, but it also lessens stakeholder pressure and may lead to sloppy governance methods. The statistically significant negative association between strategic holdings and ESG, E, and S scores depicts lesser conformity toward legitimacy requirements. In the initiated phase, firms pass through a very delicate financial situation, striving to balance high-return investment opportunities and ESG activities. Baldini et al. (2018) and Hasan and Habib (2017) proposed that mature organizations are more likely to participate in ESG activities, while firms in the introduction phase with larger cash are more oriented toward ESG activities. The firm's ESG, E, and S practices are positively impacted by the gender diversity of the board, proving the value of board diversity in advancing ESG practices. Board independence negatively impacts the firm's ESG, S and G practices; contradicting the findings of Shahbaz et al. (2020) might be attributed to an emphasis on short-term financial gains. This discrepancy can be rooted in prioritizing immediate financial outcomes over the long-term sustainability goals that ESG practices aim to address. However, the coefficient of board duality is not statistically significant and inconsistent with the pillars of ESG in the present study.

Our findings indicate that cash holdings have a similar beneficial effect on the ecological, social, and governance pillar scores despite the minimal connection between them. Moreover, other control variables also uniformly impact the E, S, and G pillar scores. Our findings support the idea that a firm's cash holdings have an

impact on its ESG performance and that companies with larger cash holdings adhere to the legitimacy criteria more closely than those with smaller financial resources. Consequently, our findings support the relationship between the legitimacy theory and the slack financial resource hypothesis.

Theoretical and Practical Implications

The findings could be of relevance to the corporates as well as policymakers. Cash holdings are vital in a firm's allocation toward long-term investment in ESG activities. In line with the legitimacy and financial slack theories, firms with high cash holdings are likely to perform better regarding ESG and its various dimensions. As investors, stakeholders, and policymakers increasingly evaluate firms based on ESG parameters, corporate management must reserve sufficient funds for ESG integration activities. One significant implication for the investors and stakeholders is that ESG integration is a long-term activity and might not generate positive returns in the short term. Therefore, investors and stakeholders need to be patient with their ESG capital and engage with the corporate management to augment their efforts towards ESG integration. Since there is a substantial size bias for ESG performance, an important implication for the policymakers and regulators is that they can articulate different levels of expectations in their ESG policies for large and smaller firms. In many emerging markets, including India, ESG disclosures are not mandatory but voluntary; structured mandatory compliance for ESG disclosure will bring prudency. Our findings demonstrate the importance of cash holdings in improving ESG performance and add to the body of knowledge on ESG performance in the modern literature. Our findings support the legitimacy of precautionary reasons for cash holdings. Our findings have important research implications. First, they provide support for the link between legitimacy theory and slack financial resource theory.

Limitations of the Study and Directions for Future Research

ESG and its pillar scores are available for only large listed firms; therefore, one limitation of the present study is that its results cannot be generalized for small and medium-sized firms. Also, finance and banking firms were excluded from the sample; therefore, the results apply to only non-financial companies. Cash holdings can moderate the association between ESG and firm performance, and we can explore this dimension using moderation/mediation analysis. On implementing the business responsibility and sustainability reporting (BRSR) requirement in India, ESG data will be available for a larger number of firms. We can also examine the association between cash holdings and ESG performance for relatively smaller firms. Cross-country studies can also be conducted. ESG performance and its determinants for financially constrained firms can also be examined.

Authors' Contribution

This research was a collaborative effort between Dr. Himanshu Joshi and Bhavya Joshi. Dr. Himanshu Joshi conceived the idea, identified the research gaps, and developed the theoretical framework. Bhavya Joshi identified, classified, and synthesized the relevant literature. She gathered data from Refinitiv, conducted the analysis, and prepared the initial draft. Building on this foundation, Dr. Himanshu Joshi made revisions and prepared the final draft of the manuscript, ensuring its coherence and academic rigor.

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Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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