



Governing the Responsible Investment of Slack Resources in Environmental, Social, and Governance (ESG) Performance: How Beneficial are CSR Committees?

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Received: 13 May 2024 / Accepted: 5 August 2024
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Abstract

Possessing slack resources enables businesses to invest in innovative and stakeholder-focused initiatives. Therefore, we posit that higher slack resources encourage businesses to allocate these resources to improve their environmental, social, and governance (ESG) performance. Moreover, as a central sustainability governance mechanism, we hypothesize that the corporate social responsibility (CSR) committee supports investing slack resources in ESG initiatives. Using data from Nasdaq-100 firms, we find initial support for a positive effect of slack resources for ESG. However, further analyses reveal that slack resources become detrimental to ESG after an economically relevant threshold, indicating an inverted U-shaped effect of slack resources. Additionally, despite their generally positive effect, we uncover that CSR committees cannot effectively enhance the benefits of low or moderate slack levels for ESG nor prevent the detriments of elevated slack levels for ESG. Therefore, our study significantly contributes to the ongoing discourse surrounding slack resources, ESG, and the usefulness of CSR committees. These findings hold significant implications for ethical resource allocation, urging firms and their decision-makers to reconsider the dual-edged role of slack resources in the unique ESG context and support the CSR committee in realizing its potential for promoting sustainability and ethical practices within the organization.

Keywords CSR committee · ESG performance · Slack resources

Introduction

Corporate social responsibility (CSR) is a significant concern for modern-day corporations, which need to balance tensions between profit-maximization goals (the shareholder view) and societal pressures for a sustainable, equitable, and transparent business environment (the stakeholder view) (Delgado-Ceballos et al., 2023; Fatima & Elbanna, 2023). Even more so, shareholders have begun to advocate for explicitly integrating CSR into business operations and strategies (Fatima & Elbanna, 2023). As a measure of CSR, environmental, social, and governance (ESG) performance has become a crucial nonfinancial metric (Martiny et al., 2024).¹ Despite receiving extensive attention, the connection

between ESG and firm performance remains contentious, but most research supports the positive effect of ESG on financial performance (Huang, 2021). Thus, due to its financial materiality and the growing recognition of socially responsible investing (Martiny et al., 2024), it becomes imperative to understand the factors that drive ESG.

Previous research has explored various organizational factors as predictors of ESG (for an in-depth review, refer to Gillan et al., 2021), among which resource availability has emerged as an ESG conduit—or, conversely, a barrier when lacking (Hong et al., 2012). Slack resources are the “potentially utilizable resources that can be diverted or redeployed to pursue the goals of one or more organizational actors” (Mount et al., 2024, p. 13); thus, they

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¹ ESG covers a wider range of issues than CSR or corporate social performance (CSP) due to its three underlying pillars related to environmental (e.g., resource use, carbon emissions), social (e.g., employee rights, diversity), and governance (e.g., shareholder protection, board independence) considerations (Martiny et al., 2024). In conjunction with the measurability of ESG performance, we will use firms' ESG performance to measure the sustainability performance of firms related to these three pillars.

represent an adequate measure of resource availability. However, the direct role of slack resources for ESG remains poorly understood. This comprehension is crucial because slack resources are pivotal in facilitating or constraining organizational outcomes (Mount et al., 2024), including ESG.

Drawing on the resource-based view (RBV) (Barney, 1991), prior research suggests that slack resources could represent a double-edged sword for ESG. For one, slack resources facilitate the beneficial impacts of ESG on organizational outcomes, notably firm value (e.g., Alshorman et al., 2024; Lu et al., 2023) and performance (e.g., Duque-Grisales & Aguilera-Caracuel, 2021; Lin et al., 2019). Other research suggests that financial slack may undermine CSR efforts (Shahzad et al., 2016) or be unrelated to CSR (Xu et al., 2014). Therefore, given the general significance of slack resources for ESG and the potential duality within slack deployment, it becomes evident that investigating the impact of resource slack on ESG performance is crucial to research and practice.

There are also significant gaps in the current knowledge of slack resources in the ESG context. Firstly, the limited research on slack as an enabler of ESG concentrates on financial slack resources (e.g., Lin et al., 2019; Shahzad et al., 2016; Wasiuzzaman et al., 2022), which may limit the understanding of the nuanced effects of slack on ESG because slack resources comprise more than financial resources. Specifically, slack resources are multidimensional, comprising unabsorbed (e.g., liquid resources) and absorbed slack resources (e.g., excess staff). This distinction is significant due to the varying underlying characteristics of the two slack types (Marlin & Geiger, 2015; Mount et al., 2024), especially in the CSR domain (Zhao et al., 2024). However, previous research has either focused on unabsorbed slack (e.g., Islam et al., 2021; Wasiuzzaman et al., 2022) or absorbed slack (e.g., Mattingly & Olsen, 2018; Shang et al., 2023; Xu et al., 2014). Thus, there is a lack of research that examines both slack types as direct antecedents to ESG, which might explain the conflicting findings obtained in previous studies.

Moreover, within the ESG context, slack resources have predominantly been conceptualized through the lens of the RBV. While this viewpoint effectively explains the buffering and exploration-enhancing advantages of slack resources (Mishina et al., 2004; Nohria & Gulati, 1996), it overlooks the potential drawbacks from an agency-theory standpoint (Jensen, 1986; Leibenstein, 1969), such as fostering managerial self-opportunism or loosening control systems (Bourgeois, 1981; Nohria & Gulati, 1996). Thus, framing the discussion of resource availability in the ESG context within a more comprehensive theoretical framework can illuminate the potentially dual nature of slack resources in corporate sustainability.

Additionally, slack resources have predominantly been examined as a contingency factor in the relationship between ESG and organizational outcomes (e.g., Lin et al., 2019; Uyar et al., 2023; Zhao et al., 2024), overlooking the potential direct impact of slack resources on ESG. This research gap is significant as slack resources serve to reconcile shareholder and stakeholder interests (Shahzad et al., 2016), potentially acting as both drivers and barriers to ESG performance.

Finally, existent slack research tends to view CSR as a voluntary endeavor (e.g., Harrison & Coombs, 2012; Kang et al., 2016; McGuire et al., 1988), despite ESG performance being increasingly recognized for its financial materiality (e.g., by enhancing reputation capital or attracting investors) (Delgado-Ceballos et al., 2023; Jebe, 2019). Prior research has focused on slack resources in the context of CSR (e.g., Islam et al., 2021; Shang et al., 2023) and not the new context of ESG, which is potentially less voluntary and in all cases more comprehensive—consequently, more difficult to realize—than CSR. Therefore, it is essential to explore whether slack resources can also facilitate, at least in part, non-voluntary ESG activities. Considering these intertwined gaps, we pose the following research question: *Are slack resources drivers or barriers to ESG performance?*

To complement the RBV with an agency-theory lens, we propose that the relationship between slack resources and ESG should be studied under the contingency of CSR governance. Especially a dedicated CSR committee—composed of directors skilled to identify, formulate, and implement sustainability strategies and raise their importance in the boardroom (Fuente et al., 2017)—could lead to enhanced ESG performance through slack resources (Radu & Smaili, 2022). Further, CSR committees align with agency theory's premise that boards fulfill fiduciary responsibilities by monitoring managerial actions (Hillman & Dalziel, 2003). A distinct CSR committee can facilitate better board supervision of ESG-related decisions and guide managers toward more ethical and accountable conduct (Gill, 2008; Radu & Smaili, 2022), indicative of a shift from narrow shareholder focus to broader stakeholder consideration (Gill, 2008). The CSR committee could serve as a mechanism for directing slack resources toward ESG endeavors, primarily due to the consideration and monitoring of stakeholder interests at the strategic level (Eberhardt-Toth, 2017). Consequently, CSR committees have the potential to address ethical challenges surrounding the managerial allocation of slack resources by ensuring that these surplus resources are directed toward environmental, social, and ethical initiatives (Leyva-de la Hiz et al., 2019).

However, despite the potential benefits, the presence of a CSR committee might be merely symbolic, lacking the efficacy needed for effective managerial oversight of ESG issues (Chams & García-Blandón, 2019; Michelon

& Parbonetti, 2012). Recognizing these potentially conflicting effects underscores the necessity to discern which aspect is pertinent when making investment decisions regarding slack resources. This argument leads to the second research question: *How does the presence of a CSR committee influence the relationship between slack resources and ESG?*

This study explores these two interconnected research questions using 12 year data from Nasdaq-100 firms. Grounded in an RBV framework, the results support the positive effect of slack resources on ESG. However, they also reveal that the presence of a CSR committee positively influences ESG but attenuates the positive association between slack resources and ESG performance.

We perform additional analyses to shed light on the underlying dynamics. Firstly, we demonstrate that the effect of slack resources on ESG is not linearly positive; instead, it follows an inverted U-shaped trajectory, where the effect of resource slack turns negative beyond an economically relevant threshold. Secondly, we reveal that the unabsorbed slack dimension predominantly shapes the slack effect, albeit its magnitude increases when both slack dimensions interact in driving ESG. Thirdly, the impact of resource slack is discernible in the environmental and social dimensions of ESG but not in the governance dimension.

This study offers several contributions to management literature. We enrich the RBV by identifying slack resources as pivotal facilitators of ESG performance. Furthermore, the inverted U-shaped effect demonstrates a crucial trade-off between resource slack and ESG performance: while resource availability fosters ESG at low slack levels, excessive slack resources increasingly impede ESG. Hence, our findings align with the documented inverted U-shaped relationship between slack resources and innovation (e.g., Chiu & Liaw, 2009; Heubeck & Meckl, 2024; Nohria & Gulati, 1996) and invigorate the discourse on slack resources in management and organizational domains (Lu et al., 2023; Mount et al., 2024). We present evidence supporting RBV arguments, indicating that these resources drive ESG at low slack levels. Conversely, our findings align with the agency view and its adjacent inefficiency arguments at higher slack levels, suggesting that high slack levels can pose barriers to ESG. Moreover, this study responds to recent research inquiries (Heubeck & Meckl, 2024; Lu et al., 2023; Mount et al., 2024) by emphasizing the primary influence of unabsorbed slack resources in the ESG context.

Furthermore, the findings underscore that slack effects are most pronounced in the environmental and social pillars of ESG, with no discernable effect in the governance realm. Thus, we foster a nuanced comprehension of the relative significance of slack resources for the pillars of ESG, echoing recent scholarly calls (Duque-Grisales & Aguilera-Caracuel, 2021; Shang et al., 2023).

Additionally, this study contributes to CSR governance literature by revealing that a CSR committee mitigates the ESG advantages of organizational slack, potentially due to the dual-edged nature of slack resources. Simultaneously, we demonstrate that CSR committees are ineffective in mitigating the adverse impact of slack resources on ESG performance at elevated slack levels. This result challenges conventional perspectives on CSR governance, highlighting the limited ability of CSR committees to influence resource allocation decisions concerning slack resources.

Taken together, our study contributes to the discourse on ethical business and sustainable investment behavior. We demonstrate that slack resources can support business ethics while, at the same time, revealing paradoxical tensions in both the relationship between slack resources and ESG as well as the contingency role of CSR committees. These findings hold significant implications for generating a business environment geared toward sustainable and ethical operations. Through this contribution, we shed light on the primary purpose of ethical business in creating “environmental, social, and financial wealth, thereby making a positive contribution to the environment and society in a financially responsible manner” (Spiller, 2000, p. 151).

Theory Background and Hypotheses Development

Slack Resources and ESG Performance

Slack resources constitute a central component of the resource portfolio and encompass resources beyond the firm’s immediate operational needs (Cyert & March, 1963; Nohria & Gulati, 1996). The concept of slack resources can be traced back to the foundational works of resource-based theory by scholars like Penrose (1959). Through the lens of the RBV, firms can gain competitive advantages by leveraging their internal resources (Barney, 1991). Accordingly, firms endowed with superior resources—those possessing tangible or intangible assets characterized by value, rarity, inimitability, and non-substitutability (VRIN)—are positioned to pursue strategies and actions that confer competitive advantage (Barney, 1991; Dierickx & Cool, 1989). As determinants of resource availability, slack resources influence the extent to which firms can—and are willing to—allocate resources to projects of varying risk levels (Lu et al., 2023; Nohria & Gulati, 1996).

Slack resources are a focal construct in Cyert and March’s (1963) behavioral theory of the firm (BTOF) (Argote & Greve, 2007; Mount et al., 2024). Rooted in the surplus nature of slack resources, the BTOF emphasizes slack’s role in shielding organizations from internal (e.g., goal conflicts, performance pressure reduction) and

external (e.g., economic downturns, competitive challenges) disruptions. Slack provides the necessary resources to address and manage these challenges while maintaining the stability of ongoing business operations (Argote & Greve, 2007; Bourgeois, 1981; Lu et al., 2023). Consequently, organizational theorists regard slack resources as pivotal drivers of organizational growth and performance (Lu et al., 2023).

These two theoretical perspectives elucidate the primary functions of slack resources in fostering ESG performance. Specifically, slack resources enable firms to fulfill two critical functions, both of which are highly pertinent in the ESG context. The first involves *risk-taking, exploration, and innovation*, as organizations endowed with surplus resources can more readily mitigate goal conflicts, lower acceptance thresholds, and tolerate delayed or uncertain returns from projects compared to less resource-endowed counterparts. From an RBV perspective, slack resources represent a reservoir of discretionary assets that can be channeled into uncertain endeavors (Bentley & Kehoe, 2020; Mishina et al., 2004; Shahzad et al., 2016), including those related to ESG initiatives.

The first function of slack resources encapsulates their role in inducing ESG initiatives by fostering risk-taking, exploration, and innovation, which is essential for companies embarking on long-term and risk-oriented ESG endeavors (Lu et al., 2023). While this perspective has traditionally dominated innovation research (e.g., Bentley & Kehoe, 2020; Tabesh et al., 2019), it is equally applicable to the ESG context. Investments in ESG projects extend beyond firms' core business responsibilities (Gillan et al., 2021; Jebe, 2019). Therefore, prioritizing ESG projects over other profitable endeavors could entail significant opportunity costs—potentially offsetting the benefits of ESG (Lu et al., 2023). However, firms with slack resources are better positioned to balance shareholder and stakeholder interests as they possess the resources to pursue both simultaneously—without needing to consider the potential trade-off between them (Lu et al., 2023). Existing research corroborates that mitigating financial constraints fosters CSR (e.g., Harrison & Coombs, 2012; Hong et al., 2012).

The second function of slack resources pertains to *flexibility and responsiveness*. Resource-rich firms are equipped to capitalize on emerging opportunities as they possess the necessary resources or can readily mobilize them. Consequently, slack resources enhance the adaptability and agility of firms (Bentley & Kehoe, 2020; Lu et al., 2023). In the ESG context, firms with ample slack resources can invest in new environmentally friendly technologies promptly, without protracted decision-making processes. Hence, firms with substantial slack resources are more inclined to embrace the uncertainty of change (Cyert & March, 1963; Nohria & Gulati, 1996), making investments in ESG more probable.

These arguments suggest that due to the (1) enhanced *risk-taking, exploration, and innovation* and (2) increased *flexibility and responsiveness* associated with slack resources, firms with higher levels of slack are more inclined to seek out, devise, initiate, and realize ESG initiatives.

On the contrary, agency theorists offer a more pessimistic perspective on slack resources, suggesting that an abundance of slack can breed inefficiencies, encourage self-serving behavior, and foster managerial complacency (Bourgeois, 1981; Leibenstein, 1969; Nohria & Gulati, 1996). Consequently, slack resources may lead to heightened risk-aversion and prioritizing personal projects over decisions that enhance value or support stakeholders (Bourgeois, 1981; Jensen & Meckling, 1976; Nohria & Gulati, 1996). However, in the distinctive decision-making context of ESG, research indicates that self-interested managers often pursue initiatives that benefit stakeholders due to their desire for personal fulfillment, recognition, or reputation reinforcement (Masulis & Reza, 2015; Petrenko et al., 2016). Thus, higher levels of slack may also bolster ESG performance as the agency issues associated with slack—such as diminished oversight (Jensen, 1986; Leibenstein, 1969)—empower managers to advance their personal agendas, including enhancing their reputation or expanding their social networks (Masulis & Reza, 2015).

In conclusion, we posit that ESG presents a fitting investment environment for slack resources due to the discretionary nature shared by both (Harrison & Coombs, 2012; Kang et al., 2016; McGuire et al., 1988). Furthermore, the escalating pressures toward ESG have transformed ESG from predominantly voluntary endeavors to compelling business imperatives owing to the financial significance they entail (Duque-Grisales & Aguilera-Caracuel, 2021; Jebe, 2019). These arguments lead to the first hypothesis:

Hypothesis 1 Slack resources have a positive impact on ESG performance.

Moderating Effect of CSR Committee

The specific design of corporate governance structures establishes the framework for a firm's ethical, legal, and social conduct (Jamali et al., 2008). One specific CSR governance mechanism is establishing a separate CSR committee, which helps companies align their corporate governance with ESG objectives (Fuente et al., 2017; Spitzeck, 2009). Thus, corporate governance structures can be configured to support ESG initiatives.

Drawing from stakeholder theory, CSR committees are established to address stakeholder interests and aim to foster sustainability within businesses (Chams & García-Blandón, 2019; García-Sánchez et al., 2019). In addition, Burke et al. (2019) argue that CSR committees serve stakeholder and

shareholder interests, recognizing that shareholders are increasingly concerned with business actions regarding employees and the environment. Furthermore, CSR committees are driven by creating value and attaining financial success, aligning with shareholders' expectations (Burke et al., 2019).

The CSR committee performs two primary functions to ensure it can effectively shape the board's decision-making. Firstly, it monitors the board to ensure alignment with the interests of various stakeholder groups and compliance with regulations and policies (Chams & García-Blandón, 2019; García-Sánchez et al., 2019). Secondly, it advises the board to improve decision-making, mitigate risks, and raise directors' general awareness of ESG considerations (Burke et al., 2019; Eberhardt-Toth, 2017; Fu et al., 2020). In the context of slack resources, the board of directors occupies a central role due to its authority in allocating resources toward ESG (Harrison & Coombs, 2012; Radu & Smaili, 2022). Furthermore, CSR committees shape employee behavior by setting CSR regulations and implementing incentives to promote responsible practices (Liao et al., 2015).

Empirical research has demonstrated that a CSR committee positively impacts the ESG performance of firms (Husain et al., 2018). In their literature review, Velte and Stawinoga (2020) concluded that appointing a CSR committee impacts CSR performance positively. Birindelli et al. (2018) found that CSR committees significantly influence firms' ESG performance, particularly in communicating their environmental orientation to external stakeholders. However, there is little evidence of whether CSR affects all ESG sub-factors equivocally. While Biswas et al. (2018) demonstrated that a CSR committee positively influences the social and environmental performance of Australian firms, Radu and Smaili (2022) found that CSR committees of Canadian firms only influence their social performance.

In addition, conflicting findings from other studies prompt a discussion regarding whether CSR committees may function more as symbolic gestures rather than influencing directors' decision-making processes (Chams & García-Blandón, 2019). Research shows that firms with a CSR committee do not exhibit a greater propensity to reward environmental strategies than those lacking such structures (Berrone & Gomez-Mejia, 2009). Similarly, the presence of CSR committees does not lead to a significant increase in the quality of environmental disclosure (Rupley et al., 2012).

In light of these mixed results, we build on Harrison and Coombs (2012), who demonstrated that corporate governance mechanisms influence the relationship between slack resources and discretionary investments, to suggest that a CSR committee will use its influence to encourage the board of directors to allocate slack resources to ESG initiatives. The moderation effect occurs because the CSR committee recognizes the potential for maximizing value for

stakeholders and shareholders. Thus, it provides the board of directors with knowledge on sustainability initiatives and guides managers' decision-making toward enhancing their firm's ESG performance (Michelon & Parbonetti, 2012). Therefore, we propose the following hypothesis:

Hypothesis 2 The presence of a CSR committee positively moderates the relationship between slack resources and ESG performance.

Method

Sample Selection and Data Collection

Our research sample consists of firms listed on the Nasdaq-100 stock market index, which includes the 100 largest nonfinancial firms by market capitalization. This sample selection was deliberate, as these firms face considerable stakeholder pressures to engage in sustainable investments due to their prominent position in the capital market, a trend also reflected in the ESG guidelines implemented by Nasdaq (Shields et al., 2021).

To ensure an adequate sample size, 2010 was chosen as the starting point for data collection, consistent with prior research that has also been selected this year to mitigate the post-effects of the Global Financial Crisis (Heubeck & Meckl, 2024). The data collection concluded in 2021, which was chosen to account for the one-year lag in ESG performance and represented the most recent data available for the year 2022.

An initial list of constituents was compiled from the historical lists of the Nasdaq-100 index spanning 2010–2021 to circumvent survivorship bias (Brown et al., 1992). We sourced data for these firms from LSEG Eikon, a premier financial and ESG data repository widely utilized in numerous previous studies (e.g., Delgado-Ceballos et al., 2023; Just et al., 2023). We collected data for the independent variables for the observation period, with ESG data lagged by one year. Our data collection led to 165 firms, comprising 1439 observations. Table 1 summarizes the total number of firms over the specified time frame.

Variable Measurement

ESG performance is measured using LSEG Eikon's ESG scores, which rank firms into percentiles (from 0 to 100) and assign corresponding grades (from D – to A +) (LSEG, 2023).² This percentile score quantifies a firm's ESG

² We acknowledge that the choice of ESG data provider may have influenced our results. Variations in ESG scores across different providers could lead to differing outcomes (see Berg et al., 2022 for an investigation of the various ESG score providers). We chose LSEG

Table 1 Time series: firm count and CSR committee adoption

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Number of firms	95	105	122	121	125	130	128	122	127	128	130	106
Of which have a CSR committee	37	48	61	58	55	52	53	54	56	73	101	92
	38.95%	45.71%	50.00%	47.93%	44.00%	40.00%	41.41%	44.26%	44.09%	57.03%	77.69%	86.79%

performance, with the ESG score from $t + 1$ utilized to address endogeneity concerns (Semadeni et al., 2022).

Slack resources are measured by differentiating between absorbed and unabsorbed slack (Sharfman et al., 1988), utilizing averages from measures proposed by Wiseman and Bromiley (1996) and Lee and Wu (2016). *Absorbed slack*, also known as recoverable slack, is measured by the selling, general, and administrative (SG&A) expenses-to-sales ratio, capturing resources integrated into the organizational design, such as personnel, training, or advertising costs. *Unabsorbed slack* comprises available slack (current ratio = current assets/current liabilities), reflecting disposable resources via the abundance of short-term working capital, and potential slack (debt-to-equity ratio = equity/liabilities), indicating a firm's financial structure and borrowing capacity.

The presence of a *CSR committee* is indicated by a dummy variable (assigned a value of 1 if present and 0 if absent) (Endrikat et al., 2021; Radu & Smaili, 2022).

Following prior studies, we also incorporated several board and firm characteristics that may influence ESG performance. Table 2 provides an overview of these controls, outlining their definitions, the expected relationship with ESG performance, and exemplary studies.

Analysis and Results

Descriptive Statistics and Correlations

Table 3 illustrates the distribution of the sample across different industries. Most of the sample originates from the Manufacturing, Information, and Professional, Scientific, and Technical Services sectors.

Table 4 summarizes descriptive statistics, including means, standard deviations, and correlation coefficients. On

average, firms have an ESG score of 53.51, corresponding to a 'B -' grade, indicating above-average ESG performance (LSEG, 2023), consistent with findings from other studies (e.g., Heubeck, 2024). The average scores for each ESG pillar indicate some variance, with firms scoring lowest on the environmental pillar (environmental pillar: 44.11; social pillar: 56.83; governance pillar: 55.01).

Firms, on average, possess 1.008 units of slack resources. The averages for absorbed and unabsorbed slack are 0.213 and 1.803, respectively, comprising a mean of 2.324 for available slack and 1.283 for potential slack. These figures align with previous research (e.g., Lee & Wu, 2016), except for the potential slack measure, which is approximately half. Firms in our sample have considerable short- and long-term slack resources due to a relatively low SG&A-to-sales ratio (absorbed slack), a high current ratio (available slack), and a debt-to-equity ratio indicating good financial health and relatively low investment risk (recoverable slack) (Lee & Wu, 2016).

Figure 1 visualizes the distribution of the slack resource variable. The histogram indicates that most firms have relatively low slack levels due to the right-skewness and high density observed toward the left of the diagram. The slack values range from 0 to about 5 for most of the observations, except for two outliers removed from further analysis.³

Approximately, half of the firms (51.4%) have a CSR committee, consistent with findings from other studies (e.g., Derchi et al., 2021; Radu & Smaili, 2022). As summarized in Table 1, there has been an increasing trend in the adoption of CSR committees over time, despite some fluctuations. The later periods especially showcase a substantial increase. This rise might indicate a growing recognition of CSR committees among firms.

Table 4 also presents mean values and standard deviations for the control variables. We find statistically significant correlations between slack resources, CSR committee presence, and ESG performance. The coefficients indicate no multicollinearity between variables (Kennedy, 2008), which

Footnote 2 (continued)

Eikon because it is one of the most widely used databased in empirical research (e.g., Delgado-Ceballos et al., 2023; Just et al., 2023). LSEG Eikon is a leading data provider widely adopted by both practitioners and scholars due to its extensive coverage and rigorous methodologies, which establish it as a credible primary source for ESG data (Del Vitto et al., 2023).

³ Excluding these outliers does not impact our primary results, as confirmed by subsequent unreported tests that included the two outliers.

Table 2 Control variables: Definition, expected relationship, and exemplary references

Variable	Definition	Expected effect on ESG performance	Exemplary studies
(1) Board size	Number of board members	<i>Positive</i> due to increased diversity in perspectives	He and Jiang (2019)
(2) Board independence	Percentage of independent directors	<i>Positive</i> due to more efficient monitoring	Radu and Smaili (2022)
(3) Board meeting number	Number of board meetings	<i>Positive</i> due to increased board activity and socialization processes	Birindelli et al. (2018); Radu and Smaili (2022)
(4) Board meeting attendance	Average attendance of directors at board meetings	<i>Positive</i> due to increased board activity and socialization processes	Heubeck and Meckl (2024)
(5) CEO duality	Dummy variable, coded with values of 1 if the CEO is the board chairman, 0 if otherwise	<i>Negative</i> due to decreased monitoring	Endrikat et al. (2021); Radu and Smaili (2022)
(6) Board gender diversity	Percentage of female directors in relation to total board size	<i>Positive</i> due to increased diversity and greater stakeholder concern	Heubeck (2024)
(7) Director tenure	Average tenure of board members	<i>Negative</i> due to decreased monitoring and increased change inertia	Bravo and Reguera-Alvarado (2017)
(8) Director affiliations	Average number of external corporate affiliations of board members	<i>Positive</i> due to increased resource access and information exchange	Barroso-Castro et al. (2016)
(9) Director skills	Percentage of directors with an industry-specific or financial background	<i>Positive</i> due to increased monitoring and knowledge	He and Jiang (2019); Heubeck (2024)
(10) Management compensation	Total management compensation measured in 1 million USD	<i>Positive</i> due to increased monitoring and better-skilled directors	Ryan and Wiggins (2004)
(11) Sustainability compensation incentives	Dummy variable, coded with values of 1 if senior executives' compensation is linked to CSR, sustainability, or health and safety targets, 0 if otherwise	<i>Positive</i> due to greater incentives to promote sustainability	Cordeiro et al. (2000)
(12) Firm age	Years since incorporation grouped in four age intervals (Coad et al., 2016)	<i>Positive</i> due to increased legitimacy pressures	D'Amato and Falivena (2020)
(13) Firm size	Natural logarithm of the total number of employees	<i>Positive</i> due to increased stakeholder pressure	D'Amato and Falivena (2020); Heubeck (2024)
(14) Firm performance	Return on equity	<i>Positive</i> due to increased resource availability and support for ESG initiatives	Huang (2021)
(15) R&D intensity	R&D spending to sales ratio; missing R&D values replaced with 0 (Koh & Reeb, 2015)	<i>Positive</i> due to direct or spillover benefits for sustainable business operations	Xu et al. (2021)
(16) Industry affiliation	Dummy variables for two-digit NAICS codes	Captures potential differences between industries	Radu and Francoeur (2017)
(17) Years	Dummy variables for observation years	Captures potential differences between years	Just et al. (2023); Radu and Smaili (2022)

we will assess using variance inflation factors (VIFs) during regression analysis.

Statistical Procedure and Hypothesis Test Results

Based on prior studies (e.g., Heubeck, 2024; Lee & Wu, 2016), a panel data estimator is deemed more appropriate

than ordinary least squares (OLS) regression due to the longitudinal structure of the data. The Breusch-Pagan Lagrange multiplier test confirmed the panel data structure, warranting the use of a panel data estimator over OLS regression (Breusch & Pagan, 1980). The Durbin-Wu-Hausman test indicated that the fixed effects model suits the data (Greene, 2019). Detection of possible heteroscedasticity via the

Table 3 Distribution of firms in the different industries

Industry		Number of firms	Percentage
Code	Description		
21	Mining, quarrying, and oil and gas extraction	2	1.21
22	Utilities	2	1.21
31–33	Manufacturing	56	33.94
42	Wholesale trade	4	2.42
44–45	Retail trade	15	9.09
48–49	Transportation and warehousing	6	3.64
51	Information	45	27.27
52	Finance and insurance	3	1.82
53	Real estate and rental and leasing	1	0.61
54	Professional, scientific, and technical services	21	12.73
56	Administrative and support and waste management and remediation services	5	3.03
72	Accommodation and food services	3	1.82
81	Other services (except public administration)	2	1.21
Total (2010–2021)		165	100.00

modified Wald test led to the usage of heteroscedasticity-robust standard errors (Greene, 2019). The pre-estimation assessments revealed that a fixed effects panel data estimator with heteroscedasticity-robust standard errors offers the best-fit estimation approach. Standard errors were clustered at the firm level.

Table 5 presents the regression results, which remain unaffected by multicollinearity, as evidenced by VIF tests and correlation coefficients below conventional thresholds (Johnston et al., 2018; Kennedy, 2008). We executed regression models hierarchically, with Model 1 comprising the control variables, Model 2 adding the slack resource variable (Hypothesis 1), Model 3 including the CSR committee variable, and Model 4 adding the interaction between slack resources and CSR committee (Hypothesis 2). R^2 values exceed conventional levels across all models. The hierarchical regression results demonstrate that study variables contribute to the research model's explanatory power, as additional variables enhance explanatory capacity compared to the baseline model ($\Delta R^2 = 0.127$).

Hypothesis 1 posited a positive direct effect of slack resources on ESG performance. Regression results support this hypothesis, indicating a positive and significant coefficient ($b = 1.863$, $p = 0.053$). Thus, slack resources foster firms' ESG performance.

Hypothesis 2 suggested that the presence of a CSR committee amplifies the positive effect of slack resources on ESG performance. While the interaction between slack resources and the CSR committee is significant, the coefficient is negative ($b = -2.185$, $p = 0.024$). Consequently, Hypothesis 2 is rejected due to an opposite effect, implying that the positive impact of slack resources on ESG performance diminishes in firms with a CSR committee.

Additional and Robustness Tests

Nonlinear Slack Effect

The data analysis has yielded somewhat inconsistent results, as indicated by the negative significant correlation between slack resources and ESG performance observed during descriptive analysis, contrasting with the positive significant effect of slack resources on ESG performance revealed in the regression analysis. These findings suggest a potential nonlinear relationship between slack resources and ESG performance, consistent with insights from prior studies in other contexts (e.g., George, 2005; Heubeck & Meckl, 2024; Tan & Peng, 2003).

We investigated the presence of a nonlinear effect by incorporating the squared variable of slack resources into the regression model. Our analysis provides initial support for an inverted U-shaped impact of slack on ESG, with the linear effect showing a positive and significant coefficient ($b = 5.858$, $p = 0.005$) and the nonlinear effect demonstrating a negative and significant coefficient ($b = -1.023$, $p = 0.004$) (Haans et al., 2016). To substantiate this relationship, we employed a three-stage procedure (Lind & Mehlum, 2010). Firstly, Sasabuchi's (1980) test affirms the inverse U-shaped relationship ($p = 0.005$), with the joint significance of the slack variables given ($p = 0.016$). Secondly, the turning point of this inverse U-shaped relationship is 2.863. Thirdly, utilizing Fieller's standard errors, we calculated the 95% confidence interval as [0.025; 5.640]. Thus, the extreme point lies within the confidence interval. Importantly, these findings were robustly supported by the joint significance of the control variables ($p = 0.000$) and all model variables ($p = 0.000$).

Table 4 Descriptive statistics and correlations

	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9
1 ESG performance	53.509	0.519	1								
2 Slack resources	1.008	0.019	-0.118***	1							
3 CSR committee	0.514	0.013	0.621***	-0.025	1						
4 Board size	10.114	0.056	0.311***	-0.212***	0.266***	1					
5 Board independence	79.374	0.304	0.331***	-0.048*	0.247***	0.044*	1				
6 Board meeting number	7.894	0.101	0.080***	-0.030	0.057**	0.038	0.074***	1			
7 Board meeting attendance	78.585	0.208	0.227***	-0.083***	0.142***	0.004	0.016	-0.049*	1		
8 CEO duality	0.601	0.013	-0.093***	0.031	-0.088***	-0.020	-0.077***	-0.130***	0.038	1	
9 Board gender diversity	19.457	0.293	0.428***	-0.116***	0.373***	0.234***	0.273***	0.113***	0.084***	-0.072***	1
10 Director tenure	9.351	0.102	-0.029	0.109***	-0.151***	-0.042	-0.188***	-0.206***	0.074***	0.236***	-0.210***
11 Director affiliations	0.986	0.017	0.056**	-0.188***	0.137***	0.137***	0.133***	0.095***	0.019	-0.225***	0.141***
12 Director skills	57.828	0.517	-0.024	0.112***	-0.093***	-0.136***	-0.056**	-0.025	-0.051*	0.073***	-0.117***
13 Management compensation	42.022	1.988	0.100***	-0.041	0.090***	0.128***	-0.019	0.118***	-0.051*	-0.011	0.091***
14 Sustainability compensation incentives	0.252	0.011	0.310***	-0.026	0.227***	0.135***	0.149***	-0.033	0.120***	0.034	0.077***
15 Firm age	3.212	0.025	0.368***	-0.138***	0.192***	0.211***	0.225***	-0.051*	0.094***	0.047*	0.147***
16 Firm size	9.596	0.036	0.476***	-0.277***	0.420***	0.428***	0.002	-0.008	0.122***	-0.008	0.246***
17 Firm performance	0.089	0.068	0.054**	0.026	0.079***	0.037	-0.012	0.137***	-0.008	-0.056**	-0.001
18 R&D intensity	0.119	0.008	-0.021	0.205***	-0.049*	-0.099***	0.059**	0.007	-0.074***	-0.051*	-0.034
Mean		Std. Dev.	10	11	12	13	14	15	16	17	18
1 ESG performance	53.509	0.519									
2 Slack resources	1.008	0.019									
3 CSR committee	0.514	0.013									
4 Board size	10.114	0.056									
5 Board independence	79.374	0.304									
6 Board meeting number	7.894	0.101									
7 Board meeting attendance	78.585	0.208									
8 CEO duality	0.601	0.013									
9 Board gender diversity	19.457	0.293									
10 Director tenure	9.351	0.102									
11 Director affiliations	0.986	0.017									
12 Director skills	57.828	0.517									
13 Management compensation	42.022	1.988									
14 Sustainability compensation incentives	0.252	0.011									
15 Firm age	3.212	0.025									
16 Firm size	9.596	0.036									

Table 4 (continued)

	Mean	Std. Dev.	10	11	12	13	14	15	16	17	18
17 Firm performance	0.089	0.068	0.009	0.026	-0.007	0.008	-0.009	0.044*	0.009	1	
18 R&D intensity	0.119	0.008	-0.045*	0.013	0.014	0.003	-0.033	-0.142***	-0.250***	-0.009	1

$N = 1439$; ** $p < 0.01$, *** $p < 0.05$; * $p < 0.10$

Thus, we find that the actual slack effect on ESG is inverse U-shaped. Essentially, these findings offer an alternative interpretation of the impact of slack resources on ESG performance by indicating that the effect is not consistently positive; instead, it remains positive until reaching 2.863 units of slack, after which it becomes harmful.

We further examined the moderation effect of the CSR committee on the inverse U-shaped relationship between slack resources and ESG. Contrary to earlier results, the moderation effect of the CSR committee on this relationship is insignificant ($b = 0.097$, $p = 0.857$). Hence, we conclude that CSR committees cannot effectively mitigate the adverse impact of slack resources at elevated slack levels.

Slack Resource Dimensions

We conducted additional analyses using unabsorbed and absorbed slack measures to explore how the underlying slack resource dimensions affect ESG. Our findings reveal that unabsorbed slack significantly and positively affects ESG ($b = 0.907$, $p = 0.057$), whereas absorbed slack positively affects ESG, albeit statistically insignificant ($b = 6.875$, $p = 0.200$). These findings suggest that the two slack types vary significantly in their effect on ESG, with unabsorbed slack (discretionary resources) facilitating ESG and absorbed slack (non-discretionary resources) not affecting ESG. Furthermore, our supplementary results highlight the possibility of a combined and amplified positive effect on ESG stemming from the interplay between these two slack types.

Given the inverted U-shaped relationship between slack resources and ESG, we investigated whether this nonlinear pattern extends to the underlying unabsorbed and absorbed slack types. Our analysis confirms an inverted U-shaped effect for unabsorbed slack due to a positive and significant linear effect ($b = 2.891$, $p = 0.007$) and a negative and significant nonlinear effect ($b = -0.239$, $p = 0.015$). We also find that this relationship is robust (Lind & Mehlum, 2010), supported by a significant Sasabuchi test ($p = 0.025$) and an extreme point (6.053) within the 95% confidence interval $[-0.006; 11.115]$. Similarly, the joint significance tests yield significant results, further confirming the robustness of the inverse U-shaped relationship.

Conversely, while the direction of effects remains consistent for absorbed slack, we cannot confirm an inverted U-shaped effect as evident from an insignificant linear ($b = 23.233$, $p = 0.122$) and nonlinear effect ($b = -17.412$, $p = 0.122$). Consequently, absorbed slack in isolation does not exhibit a significant linear or nonlinear effect on ESG.

Our findings suggest that the underlying unabsorbed slack dimension primarily drives the inverted U-shaped effect of slack resources on ESG. However, when both types of slack work together, their combined effect surpasses the isolated

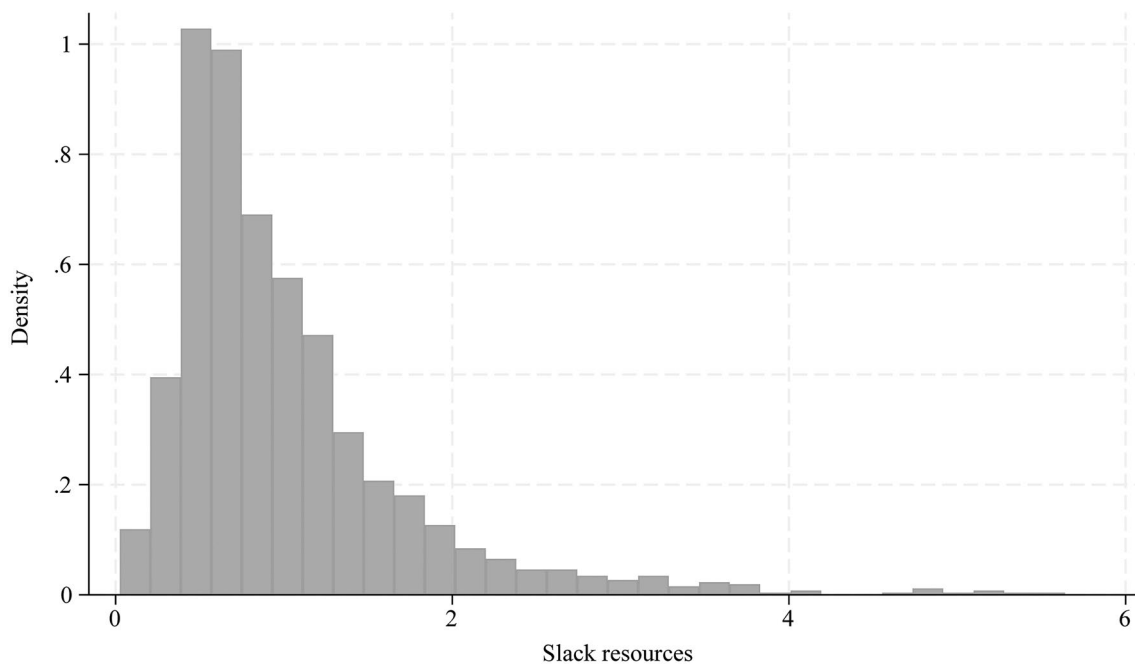


Fig. 1 Histogram: Slack resources

impact of unabsorbed slack. Thus, our study provides compelling evidence of the interplaying role of these two slack types in shaping ESG outcomes.

ESG Pillars

Given the multidimensionality of ESG, we also tested the influence of slack resources on the individual ESG pillars to determine if the effect of slack might be driven by one of the three ESG pillars.

We find that the inverse U-shaped effect of slack resources on the environmental pillar is also present due to a linear positive and significant effect ($b = 8.285, p = 0.005$); a nonlinear negative and significant effect ($b = -1.479, p = 0.007$); the joint significance of the slack ($p = 0.009$) and model variables ($p = 0.000$); and a significant test for the presence of the inverse U-shape ($p = 0.011$). The extreme point (2.802) lies within the 95% confidence interval [0.025; 5.640], thus providing evidence for an inverted U-shaped slack resource–environmental pillar relationship.

We also find that the inverse U-shaped relationship between slack resources and the social pillar, owing to a positive and significant linear coefficient ($b = 7.209, p = 0.004$), a negative and significant nonlinear coefficient ($b = -0.980, p = 0.016$), the joint significance of the slack ($p = 0.004$) and model variables ($p = 0.000$); and a significant test for the presence of the inverse U-shape ($p = 0.056$). The extreme point (3.680) lies within the 95% confidence interval [0.025; 5.640]. Therefore, in line with our main results, we also find

evidence for an inverted U-shaped relationship between slack resources and the social pillar.

In contrast, slack resources do not influence governance performance, as indicated by the insignificant linear ($b = 2.068, p = 0.491$) and nonlinear effects ($b = -0.604, p = 0.277$). This result is further supported by the nonsignificant test for an inverse U-shaped relationship between slack resources and ESG ($p = 0.247$).

These additional analyses demonstrate that the slack effect is primarily driven by the effects on the underlying environmental and social pillars of ESG. Conversely, we cannot demonstrate a significant relationship between slack resources and the governance pillar.

Excluding Industries

To ensure the robustness of our results, we excluded financial and insurance firms from the sample (3 firms excluded), given their unique characteristics, including capital structure, as highlighted in prior ESG research (e.g., Chen & Xie, 2022; Yuan et al., 2022). Assessing the hypotheses with the modified sample ($N = 1410$; 162 firms) yielded robust results.

Specifically, Hypothesis 1 is supported due to the positive and significant effect of slack resources on ESG ($b = 1.811, p = 0.060$). The moderation effect proposed in Hypothesis 2 also is negative and significant ($b = -2.068, p = 0.035$). The inverted U-shaped relationship between slack resources and ESG for the modified sample is also confirmed, with a

Table 5 Main regression results

ESG performance	Model 1		Model 2		Model 3		Model 4	
	Coefficient	Rob. Std. Error	Coefficient	Rob. Std. Error	Coefficient	Rob. Std. Error	Coefficient	Rob. Std. Error
Study variables								
Slack resources			1.863*	0.954			2.484**	1.047
CSR committee					7.480***	1.265	9.668***	1.644
Slack resources x CSR committee							- 2.185**	0.960
Control variables								
Board size	0.115	0.304	0.066	0.307	0.083	0.276	0.043	0.279
Board independ- ence	0.099	0.060	0.103*	0.061	0.094*	0.056	0.092	0.057
Board meeting number	- 0.001	0.123	0.006	0.122	0.006	0.109	0.008	0.107
Board meeting attendance	- 0.021	0.069	- 0.013	0.068	- 0.033	0.063	- 0.035	0.062
CEO duality	- 1.395	1.368	- 1.494	1.346	- 1.664	1.294	- 1.509	1.270
Board gender diversity	0.170***	0.060	0.167***	0.061	0.134**	0.057	0.138**	0.057
Director tenure	0.055	0.227	0.029	0.227	0.042	0.216	0.029	0.217
Director affiliations	- 3.670***	1.289	- 3.481***	1.297	- 3.597***	1.228	- 3.514***	1.241
Director skills	0.045**	0.021	0.046**	0.021	0.048**	0.020	0.047**	0.020
Management com- pensation	0.002	0.002	0.002	0.002	0.003*	0.002	0.003*	0.002
Sustainability compensation incentives	3.094***	0.785	3.084***	0.784	3.249***	0.808	3.329***	0.805
Firm age	2.624*	1.352	2.649**	1.340	2.557**	1.284	2.510*	1.275
Firm size	3.694***	1.026	4.022***	1.037	2.596***	0.927	2.881***	0.930
Firm performance	0.186**	0.085	0.187**	0.084	0.148**	0.075	0.145*	0.075
R&D intensity	- 2.266**	0.935	- 2.473***	0.721	- 1.817*	0.966	- 2.302***	0.812
Constant	- 0.293	12.584	- 5.720	12.911	8.783	11.585	4.326	11.838
Year controls	YES		YES		YES		YES	
Industry controls	YES		YES		YES		YES	
R^2_{within}	0.555		0.558		0.583		0.588	
R^2_{between}	0.376		0.376		0.528		0.521	
R^2_{overall}	0.367		0.364		0.500		0.494	
F	6.55		6.97		10.36		10.16	
Sig	0.000		0.000		0.000		0.000	

Fixed effects with robust standard errors clustered at the firm level, number of observations = 1439, number of firms = 165

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

linear positive and significant effect ($b = 5.640$, $p = 0.007$), a nonlinear negative and significant effect ($b = - 0.981$, $p = 0.007$), a significant test for the presence of the inverse U-shape relationship ($p = 0.007$), and an extreme point (2.874) within the bounds of the 95% confidence interval [0.025; 5.640].

The robustness of the results persisted even when firms from other industries with unique characteristics influencing ESG outcomes were excluded from the analysis. Specifically, when excluding the sector Mining, Quarrying,

and Oil and Gas Extraction (NAICS 21), the positive effect of slack resources on ESG ($b = 2.015$, $p = 0.042$) persisted and was negatively moderated by the presence of a CSR committee ($b = - 2.233$, $p = 0.023$). The inverted U-shaped effect of slack resources on ESG also holds (slack resources: $b = 6.324$, $p = 0.003$; slack resources squared: $b = - 1.091$, $p = 0.003$; inverse U-test: $p = 0.004$). The coefficients were slightly larger and more significant, underscoring the robustness of the results across different sample definitions, as suggested by previous research (e.g., Elbardan et al., 2023).

Exclude the COVID-19 Years

We assessed the potential impact of the COVID-19 pandemic on the results by excluding all observations from the years 2020 and 2021, which reduced the sample size to 1203 across 160 firms. The findings remained consistent with the main results, with a positive and significant effect of slack on ESG ($b = 1.881, p = 0.052$), negative and significant moderation effect of CSR committee ($b = -2.190, p = 0.081$), and a significant inverted U-shaped effect of slack on ESG (slack resources: $b = 5.573, p = 0.008$; slack resources squared: $b = -0.877, p = 0.019$, inverted U-test: $p = 0.035$; extreme point = 3.175; 95% confidence interval: 0.025, 5.640).

As demonstrated in Table 1, the time series of CSR committee adoption shows a sharp rise in 2020 and 2021. Therefore, by excluding these years, we can also rule out the possibility that a potential time break in the data has affected our results.

More Conservative Control Variables

We ensured that the selection of control variables did not bias our results, potentially through overcontrolling. To address this, we excluded variables that could introduce endogeneity to the model. We conducted several additional tests using more conservative control variables. For instance, we omitted potentially endogenous controls such as board gender diversity, management compensation, and sustainability compensation incentives. The model without these controls still yielded consistent results for our study variables. Specifically, the positive effect of slack resources ($b = 1.863, p = 0.054$) on ESG (Hypothesis 1) was also positive, with an increased statistical significance in the modified model ($b = 1.950, p = 0.039$). We also assessed Hypothesis 2 with more conservative control variables, yielding consistent results with the following coefficients: slack resources ($b = 2.392, p = 0.022$), CSR committee ($b = 9.487, p = 0.000$), and the interaction term ($b = -1.872, p = 0.049$). Additionally, we tested the model by excluding variables such as board independence, board meeting attendance, director affiliations, director skills, and R&D intensity, which might introduce causal interference issues. We obtain robust results when controlling for a minimum of relevant governance factors that are likely exogenous (board size, CEO duality, board independence, number of board meetings, director tenure) and firm factors (age, size, performance). We also obtain consistent results when excluding further governance or firm variables down to a minimum of likely exogenous control variables (board independence, firm size, firm age). In this model, we find the same positive and significant effect of slack resources on ESG as proposed in Hypothesis 1 ($b = 1.914, p = 0.050$) and the negative and

significant moderation effect in opposition to Hypothesis 2 ($b = -1.807, p = 0.070$).

Our results remained robust across these alternative model specifications, demonstrating a positive and statistically significant direct effect of slack resources on ESG, negatively moderated by the presence of a CSR committee.

Endogeneity Assessment

Following previous research (e.g., Harrison & Coombs, 2012; Tabesh et al., 2019), we implemented several countermeasures against endogeneity. We used a 1 year lagged dependent variable and panel data study design to address endogeneity concerns due to reverse causality. We tested for reverse causality by regressing ESG performance on 1 year lagged slack resources. The nonsignificant effect ($b = 0.001, p = 0.681$) rules out a recursive relationship, thus effectively remedying reverse causality concerns.

Besides reverse causality, endogeneity can also stem from unobserved heterogeneity (Wooldridge, 2002). We avoided biased estimates and can draw robust causal evidence from the results by implementing time-constant variables as fixed effects in the regression models (Greene, 2019; Shahzad et al., 2016). Further, the unobserved variable problem was countered by controlling for various firm and board characteristics based on prior related research and testing for more conservative sets of controls.

Following prior studies (e.g., Elbardan et al., 2023; Wang et al., 2017), we addressed potential endogeneity and omitted variable bias using an instrument variable (IV) regression analysis for panel data based on the 2SLS approach (Angrist & Krueger, 2001). We employed one-year lagged values of CSR committee as an IV, given their lack of correlation with the error term and potential correlation with the endogenous variable (Elbardan et al., 2023). The fixed effects (within) IV regression with robust standard errors clustered at the firm level provide evidence against endogeneity. The 2SLS IV fixed effects regression, with robust standard errors clustered at the firm level, indicated no endogeneity issues. Table 6 summarizes three main models calculated using the 2SLS IV fixed effects regression models. In Model 1, we can establish the absence of endogeneity in our research model as the endogeneity test shows that CSR committee is exogenous ($p = 0.424$). The lagged CSR committee variable has a significant positive effect in the first-stage model ($b = 0.545, p = 0.000$), and the F value of first-stage regression is above the recommended threshold of 10 and statistically significant ($p = 0.000$).

We performed two additional 2SLS fixed effects IV regressions to confirm the robustness of our results (see Table 6). Model 2 demonstrates that the inverted U-shaped effect of slack resources on ESG holds. Similarly, Model 3 establishes the negative and statistically significant

Table 6 2SLS IV fixed effects regression results

ESG performance	Model 1		Model 2		Model 3	
	Coefficient	Rob. Std. error	Coefficient	Rob. Std. error	Coefficient	Rob. Std. error
Study variables						
Slack resources			5.301**	2.153	3.143**	1.255
Slack resources squared			− 0.869**	0.358		
CSR committee	8.486***	2.234	8.067***	2.232	11.323***	3.700
Slack resources x CSR committee					− 3.077*	1.679
Control variables						
Board size	0.171	0.262	0.121	0.264	0.125	0.267
Board independence	0.073	0.059	0.064	0.059	0.068	0.060
Board meeting number	0.010	0.109	0.014	0.107	0.017	0.105
Board meeting attendance	− 0.002	0.068	0.004	0.067	− 0.011	0.067
CEO duality	− 1.998	1.312	− 2.142*	1.270	− 1.766	1.273
Board gender diversity	0.138**	0.058	0.145**	0.058	0.148**	0.058
Director tenure	0.137	0.228	0.101	0.226	0.120	0.230
Director affiliations	− 3.532***	1.363	− 3.416**	1.367	− 3.519***	1.364
Director skills	0.065***	0.021	0.063***	0.021	0.064***	0.021
Management compensation	0.008	0.005	0.006	0.005	0.007	0.005
Sustainability compensation incentives	2.896***	0.806	2.879***	0.809	2.980***	0.806
Firm age	2.297*	1.341	2.610**	1.324	2.304*	1.340
Firm size	1.903*	1.049	2.052**	1.037	2.211**	1.044
Firm performance	0.151*	0.086	0.152*	0.086	0.147*	0.084
R&D intensity	− 0.973*	0.498	− 1.462***	0.555	− 1.866***	0.558
Constant	16.115	11.484	11.905	11.486	11.950	11.616
Year controls	YES		YES		YES	
Industry controls	YES		YES		YES	
R^2_{within}	0.563		0.569		0.568	
R^2_{between}	0.487		0.444		0.463	
R^2_{overall}	0.497		0.478		0.487	
<i>Wald Chi</i> ²	589.06		666.94		628.72	
Sig	0.000		0.000		0.000	

Fixed effects (within) IV regression with robust standard errors clustered at the firm level, IV = one-firm-year lagged CSR committee, number of observations = 1223, number of firms = 160

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

moderation effect of CSR committee. Therefore, the 2SLS IV fixed effects regressions demonstrate that CSR committee is exogenous in our model. Nevertheless, we cannot completely rule out the absence of endogeneity in our research, showcasing the need for more causal research along the proposed relationships.

Discussion

Our research findings confirm the hypothesis that slack resources significantly impact ESG performance. However, our analysis reveals a nuanced pattern: the influence of slack resources on ESG performance follows a nonlinear, inverse U-shaped trajectory. Additionally, we did not find evidence

supporting the hypothesis that a CSR committee strengthens the positive relationship between slack resources and ESG performance. Our results suggest that the presence of a CSR committee attenuates the positive impact of slack resources on ESG performance. These findings carry significant theoretical and practical implications, which we will explore in subsequent sections.

Slack Resources and ESG

We contribute to the slack resource theory by applying the double-edged notion of slack resources to the contemporary realm of ESG performance. The inverse U-shaped relationship, extensively discussed in prior literature (e.g., Chiu & Liaw, 2009; George, 2005), notably in contexts

like innovation (e.g., Heubeck & Meckl, 2024; Nohria & Gulati, 1996), remains central to our analysis. Our study underscores that the impact of slack resources on ESG performance hinges on the relative level of slack resources. At low levels of slack, we find support for resource-based arguments due to the facilitating role of slack resources. Thus, our research enriches the RBV (e.g., Barney, 1991; Dierickx & Cool, 1989) by revealing that slack resources can qualify as VRIN resources that infer competitive advantage in ESG. Additionally, we contribute to the BTOF (Cyert & March, 1963) by highlighting the pivotal function of slack resources in resolving conflicts of interest, particularly between shareholders and stakeholders, which are pertinent in the ESG domain. In essence, we demonstrate that lower levels of slack foster ESG performance by *fostering risk-taking, exploration, innovation, and enhancing flexibility and responsiveness*.

At higher levels of slack, we find support for arguments rooted in agency theory. Our analysis of the inverted U-shaped effect reveals that an excess of slack resources—beyond the optimal point—diminishes firms' efforts toward ESG initiatives. This outcome may be attributed to inefficiency, opportunism, and risk-aversion factors (e.g., Bourgeois, 1981; Jensen & Meckling, 1976; Nohria & Gulati, 1996). Consequently, the assumption that self-interested managers prioritize ESG investments due to reputational concerns appears unfounded. Even if this argument were partially valid, the detrimental effects of higher amounts of slack resources outweigh any potential benefits. These findings suggest that an abundance of slack may lead to suboptimal investment behavior in ESG endeavors or diminishing ESG returns from additional investments. Lower levels of slack, in contrast, may compel managers to meticulously assess and prioritize promising ESG initiatives while encouraging more vigilant monitoring by the board of directors.

We contribute to the literature by examining the dynamics of various slack types, particularly absorbed and unabsorbed slack resources, in influencing ESG outcomes (e.g., Marlin & Geiger, 2015; Mount et al., 2024; Tan & Peng, 2003). We find that unabsorbed slack resources drive an inverse U-shaped effect on ESG, highlighting their discretionary nature and significant association with ESG outcomes, while absorbed slack shows no significant association (e.g., Islam et al., 2021; Shahzad et al., 2016; Wasiuzzaman et al., 2022; Xu et al., 2014). Our findings suggest that the impact of slack on ESG can vary depending on the type and level of slack resources. Additionally, we do not find an inverted U-shaped effect of absorbed slack on ESG performance, possibly due to differences in research contexts and outcome variables (Shang et al., 2023). Overall, our study underscores the dual nature of discretionary resources in relation to ESG considerations.

Furthermore, our research contributes by revealing that the effect of slack resources varies across different dimensions of ESG. While slack resources exert the most pronounced influence on environmental and social performance, they exhibit no discernible impact on governance performance. This phenomenon may stem from firms' constrained ability to promptly allocate slack resources to initiatives involving management structure, shareholder rights, or overall CSR strategy.

In summary, our study significantly contributes to the ongoing discourse surrounding slack resources and ESG by bridging these two distinct areas of inquiry through our theoretical framework. This integration represents a crucial step forward in comprehending the determinants of ESG performance and reigniting discussions on the role of slack resources within the management domain.

Contingency Role of the CSR Committee

Our empirical investigation into the contingent effects of the CSR committee reveals two contradicting influences related to ESG. Fundamentally, the results suggest a direct positive impact of the CSR committee on firms' ESG performance, consistent with previous studies (e.g., Birindelli et al., 2018; Radu & Smaili, 2022). Viewing it through an agency lens, the benefits of a separate CSR committee stem from its monitoring and advisory roles, especially in directing managers who can benefit from the expertise of the environmentally conscious CSR committees (Berrone & Gomez-Mejia, 2009). Our findings also reinforce stakeholder theory, as the CSR committee endeavors to fulfill the interests of diverse stakeholder groups urging firms to enhance their sustainability performance (Michelon & Parbonetti, 2012).

However, our findings also demonstrate a detrimental effect of the CSR committee on the relationship between slack resources and ESG performance, indicating that its presence does not encourage firms to invest additional slack resources in enhancing their ESG performance. Consequently, significant questions arise regarding the ability of this subcommittee to influence and steer management decisions. Previous research suggests that CSR committees are purely symbolic due to reputational concerns; therefore, they are not linked to enhanced sustainability performance (Chams & García-Blandón, 2019; Rodrigue et al., 2013). Although this rationale may partially explain our findings, we believe other factors may contribute to the negative moderation effect of CSR committees on the relationship between slack resources and ESG performance.

It is plausible that CSR committees lack sufficient authority to influence board or executive decisions on slack resources, serving primarily as advisory bodies whose proposals may not always be followed (Berrone & Gomez-Mejia, 2009). Alternatively, CSR committees may focus

more on investing additional slack resources in preventing CSR misconduct than actively promoting ESG initiatives (Rodrigue et al., 2013). Thus, the presence of a CSR committee may not necessarily indicate greenwashing or deception but rather a lack of empowerment to allocate slack resources to ESG initiatives. Another explanation could be that CSR committees have a negative perception of slack resources due to the detriments of high slack levels. Thus, CSR committees may restrain slack investment in ESG, even at low slack levels. We believe this argument could also be linked to the elusive nature of slack resources (Mount et al., 2024). Assessing the level of slack to determine the relative extent of slack (e.g., low vs. high) could be a non-routine and challenging task for the CSR committee. To avoid ESG detriments, the CSR committee may strive to actively reduce the investment of slack resources into ESG—irrespective of the slack level. At the same time, our findings demonstrate that the CSR committee is ineffective in reducing the ESG detriments of high slack levels. Therefore, we provide partial evidence that the pure establishment of a CSR committee is insufficient to mitigate the adverse effects of slack. The CSR committee's composition could reflect the root cause, as adept committee members might mitigate the adverse impacts of surplus resources by intensifying oversight. Further investigation is warranted to examine how various attributes of CSR committees could influence the slack resources–ESG performance relationship.

Given these findings, as agency theory suggests, our research indicates that sustainability governance mechanisms like CSR committees positively influence ESG performance. Therefore, by revealing that the advantageousness of CSR committees depends on the specific context, we pave the way for future research to unpack this subcommittee's tasks and makeup as well as gauge the firm's underlying rationale for installing a CSR committee.

Managerial Implications

Our study holds significant implications for managers looking to enhance their firm's ESG performance. The first set of implications revolves around the amount of slack resources. Our findings substantiate a general positive effect of slack resources; therefore, we strongly advocate for managers to allocate especially unabsorbed slack resources toward improving ESG performance. However, managers must exercise great caution when determining the amount of slack resources to invest in ESG initiatives. Our study reveals that lower levels of slack positively influence ESG performance, reaching an optimum point beyond which increasing slack resources diminishes ESG performance. In light of this dual effect, we recommend that managers allocate only a modest amount of slack resources to environmental and social initiatives to enhance ESG performance. Therefore, it is

crucial for managers to meticulously select ESG investment initiatives, ensuring they are specifically targeted at enhancing overall ESG performance. Investing additional slack resources into environmental and social initiatives may not yield improvements and might be better allocated to other promising causes. Consequently, the findings highlight that the vigilant monitoring of the amount of slack resources invested in ESG initiatives is imperative, especially relevant to the environmental and social pillars, as these are highly affected by slack resources.

The second set of implications pertains to utilizing governance mechanisms to boost ESG performance. Specifically, establishing a CSR committee by the board proves valuable in this regard, significantly enhancing ESG performance. Such committees oversee management practices and provide expertise in mitigating misconduct, enhancing overall ESG performance. Firms should contemplate appointing environmentally and socially conscious directors to form a subcommittee, signaling their commitment to stakeholders to improve ESG performance. Second, the CSR committee fosters ESG consciousness not only at the top management level but also among lower-level employees through incentivizing ESG-friendly practices and providing training on avoiding environmental or social misconduct. By instituting a CSR committee at the board level, firms can instill sustainability throughout the organization, meeting stakeholder expectations. Third, since establishing a CSR committee is voluntary, its presence can significantly enhance environmental and social initiatives, and its positive signaling effect can help differentiate firms from competitors and gain a competitive advantage. However, our findings also caution firms to carefully assess the role of their CSR committee concerning slack resources. The pure establishment of a CSR committee is not conducive to translating slack into ESG outcomes, and its presence does not effectively mitigate the detriments of high slack for ESG. Therefore, we advise firms to consider the CSR committee's composition and equip this subcommittee with sufficient authority. Factors such as the number of independent directors, frequency of meetings, and the directors' gender or expertise can influence the outcomes of CSR committees (Eberhardt-Toth, 2017; Elmaghrabi, 2021). Since the composition of board committees remains an under researched topic (Alhossini et al., 2021; Rossi & Tarquinio, 2017), more research is needed to study CSR committee composition in conjunction with slack resources and ESG to provide managers with more guidance for deciding who should be on the CSR committee.

Limitations and Future Research

We note that our findings should be interpreted with some limitations in mind, which can serve as departure points for future research. First, we focused on publicly listed and large

firms from a highly developed economy owing to data availability and comparability considerations. Future research could build on the study design to conduct research in less developed economies or small- and medium-sized enterprises. Changing the research setting could provide more insights into the relationships between slack resources, CSR committees, and ESG performance due to different institutional frameworks or decision-making processes that could influence these relationships.

Second, while our measure of slack is well established in management literature, future research could utilize emerging technologies, such as generative artificial intelligence, to benchmark specific slack measures against qualitative insights from firms' annual reports. For instance, leveraging tools like ChatGPT-4o could enable sentiment analysis by developing relevant keywords and analyzing financial reports (Cao & Zhai, 2023). Additionally, we focused on financial slack resources, although other types of slack (e.g., human resource slack) or other intangible resources could influence the level of ESG investment.

Third, we have not explored the dynamics between the two slack types (absorbed vs. unabsorbed), nor can we derive an optimal configuration of slack resources in the face of increasing ESG demands. Future research is needed to examine how the underlying slack types interact in affecting ESG outcomes and if there is an optimal configuration of absorbed and unabsorbed slack resources.

Fourth, our study design using secondary data did not allow us to illuminate the firm internal processes that led to the deployment of slack resources. Thus, future research is needed to explore whether and how, for example, different perceptions of managers (e.g., opportunity or threat) could lead to different slack deployment decisions for ESG.

Fifth, we treated the CSR committee as a binary variable. While this approach is standard practice in related studies (e.g., Fuente et al., 2017; Wasiuzzaman et al., 2022), future research is needed to explore the composition of the CSR committee. For example, the management capabilities of the CSR committee members could play an integral role in influencing the deployment of slack resources, as previous research has shown that managers' dynamic capabilities are related to sustainability outcomes (Heubeck, 2023). Our study aimed to understand the impact of ESG investments on firm performance across various industries rather than conducting detailed analyses of committee compositions. Although factors such as gender composition are considered important, they fall outside our primary scope and are suggested for future research.

Sixth, another limitation is that we only used data from one ESG data provider. Using other ESG rankings might have produced different results due to the lack of a standardized rating system. This variability in ratings from different ESG agencies can significantly impact the perceived performance

and efficiency of ESG investments (Berg et al., 2022). Consequently, firms may find it challenging to achieve consistent performance improvements through ESG practices due to these rating discrepancies, highlighting the ambiguous role of ESG. This limitation opens up a potential avenue for future research to explore how different ESG performance metrics affect firm performance. As some studies indicate that investing resources in ESG initiatives is inefficient (Makridis & Simaan, 2024; Mithani, 2017), assessing whether firms should allocate slack resources to ESG initiatives or other areas for better efficiency could be helpful.

Last, our study did not test for industry differences, but we controlled for them in our analysis. We focus on deriving general implications applicable across various industries; therefore, we did not conduct cross-industry comparisons. Nevertheless, further studies could close that gap and delve deeper into industry differences, especially exploring how the investment of slack resources in ESG initiatives takes effect in specific sectors such as manufacturing.

Conclusion and Contributions to Business Ethics

Although research on ESG and its impact on performance measures is extensive, there exists a gap in studies examining the antecedents of slack resources for firms' ESG performance and the governance mechanisms shaping this relationship. This study offers an in-depth analysis of the dynamics of slack resources and ESG performance and highlights the importance of further research on the potential influence of governance mechanisms.

We have demonstrated that slack resources play a crucial role in ESG performance, revealing a nuanced and contingent relationship. Our findings indicate an inverted U-shaped effect, with low slack levels positively impacting ESG, peaking at an optimal point, and declining after that. This effect is mainly driven by unabsorbed slack resources, notably affecting the environmental and social dimensions of ESG. Despite the general benefits of CSR committees, our study suggests they are ineffective in leveraging slack resources for ESG initiatives or mitigating their detrimental effects. Our research offers a detailed exploration of how slack resources, CSR committees, and ESG performance interact, providing valuable insights into their complex dynamics.

This study holds significant implications for business ethics. By shedding light on the financial antecedents of ESG performance, we demonstrate that resource availability is a critical—yet dual-edged—determinant of ethical business operations. Further, while we reconfirm the ESG benefits of CSR committees, we reveal that these sustainability-oriented subcommittees may face challenges in directing the beneficial investment of slack resources toward ESG at low slack levels

and that they cannot effectively mitigate the ESG detriments of slack resources at high levels. Thus, we urge firms to reconsider the role of the CSR committee to enable this subcommittee to realize its full potential and effectively contribute to developing strong business ethics and the global vision of a sustainable and egalitarian society. We call on top managers to purposefully allocate slack resources to address today's most pressing global challenges and broaden their decision-making horizons from self-interested motivations to promote business ethics and responsible investment of company resources.

Acknowledgements The authors acknowledge the use of ChatGPT (<https://chat.openai.com/>) and Grammarly (<https://www.grammarly.com/>) to provide suggestions for revising the contents of this manuscript and checking its grammatical correctness. After using these tools/services, the authors reviewed and edited the content as needed. The authors take full responsibility for the publication's content and confirm that it reflects their original work.

Author Contributions Tim Heubeck contributed toward conceptualization, data curation, formal analysis, investigation, methodology, project administration, supervision, validation, writing—original draft, and writing—review and editing; Annina Ahrens contributed toward conceptualization, writing—original draft, and writing—review and editing.

Funding Open Access funding enabled and organized by Projekt DEAL. Project DEAL enabled open-access funding. No other funding was received to assist with the preparation of this manuscript.

Data Availability Data are available from the corresponding author upon reasonable request but not publicly available due to the data provider's data-sharing restrictions.

Declarations

Competing interests The authors declare no relevant financial or non-financial conflicts of interest to disclose. They certify that they are not affiliated with or involved in any organization or entity with any financial or nonfinancial interest in the subject matter or materials discussed in this manuscript. The authors have no financial or proprietary interest in any material discussed in this article.

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