How ESG Reduces Idiosyncratic Risk: The Role of Consumers and Institutional Investors

Ashwin Malshe
Associate Professor, Marketing
Alvarez College of Business
University of Texas at San Antonio
ashwin.malshe@utsa.edu

Yi Yin
Postdoctoral Research Associate, Marketing
D'Amore-McKim School of Business
Northeastern University
yi1.yin@northeastern.edu

Anatoli Colicev
Chair in Marketing, Strategy and Analytics
Management School
University of Liverpool
Anatoli.Colicev@liverpool.ac.uk

Yakov Bart
Associate Professor, Marketing; Joseph G. Riesman Research Professor
D'Amore-McKim School of Business
Northeastern University
y.bart@northeastern.edu

Koen Pauwels
Distinguished Professor, Marketing
D'Amore-McKim School of Business
Northeastern University
k.pauwels@northeastern.edu

How ESG Reduces Idiosyncratic Risk: The Role of Consumers and Institutional Investors

Abstract

Practitioners regard firms' environmental, social, and governance (ESG) performances as a crucial risk management practice. However, no empirical evidence has yet linked ESG performances to firm risk through different stakeholders. Drawing on stakeholder theory, the authors develop a conceptual framework that posits (1) asymmetric relationships between individual E, S, and G performances and customer-based brand equity (CBBE) and institutional investor ownership (IIO) and (2) mediating roles of CBBE and IIO in the relationships between E, S, and G performances and firms' idiosyncratic risk. Using quarterly data from 416 firms spanning 2012–2020, the authors find that CBBE and IIO indeed mediate the associations between E, S, and G performances and idiosyncratic risk. While E performance has a positive and G performance a negative association with CBBE, E and S performances have a negative and G performance a positive association with IIO. The findings imply that firms should carefully navigate the trade-offs of E, S, and G performances to deal with multiple stakeholders.

Keywords: ESG, stakeholders, consumers, institutional investors, idiosyncratic risk

In recent years, understanding the relationship between environmental, social, and governance (ESG) performance and firm risk has emerged as a crucial area of focus for practitioners (Gorley 2022). On the one hand, improving ESG performance may reduce the likelihood of significant reputational and financial damages, thereby reducing firm risk. For example, 76% of consumers report that they would discontinue relationships with companies that treat employees, communities, and the environment poorly (PwC 2021), and institutional investors prefer firms with good ESG performance (Thomson Reuters 2021). Relatedly, companies in the top quintile of ESG performance experience three times smaller drawdowns in capital markets than those in the bottom quintile (Giese 2017), implying lower risk for firms with higher ESG performance. On the other hand, improving ESG performance takes up firm's finite resources and requires costly operational adjustments, which may shift focus toward social welfare over shareholder interests and, ultimately, increase firm risk. Supporting this, nearly half of large U.S. companies' top executives report that they have already experienced ESG backlash, and 61% expect this to persist or intensify in the next two years (Washington and Jones 2023), suggesting that ESG performance is associated with greater firm risk. These contradictory narratives pose a critical challenge for executives and highlight the need for a deeper analysis of the link between ESG performance and firm risk.

This study aims to address this challenge by disentangling the ESG performance into individual E, S, and G performances and separately examining their associations with two primary stakeholders (consumers and institutional investors) and subsequent firm idiosyncratic risk.[1] ESG performance reflects the valence of publicly available information about the firm's ESG policies, actions, and outcomes. Building on prior research, we further conceptualize ESG performance as a multidimensional construct that comprises distinct E, S, and G performances (Li and Wu 2020). These performances include mitigating climate change concerns (E), improving working conditions (S), and effectively managing the legal and regulatory environment (G). While practitioners agree that E, S, and G performances may each be important for firm risk, previous studies examining these links find mixed results (e.g., Izcan and Bektas 2022; Jacobs et al. 2016; Li et al. 2021), indicating the need for a more comprehensive investigation.

Our conceptual framework is based on stakeholder management theory (Donaldson and Preston 1995; Freeman 1984; Sodhi 2015), which argues that firms need to cater to multiple stakeholders. We examine the asymmetric relationships between E, S, and G performances and primary stakeholders: consumers and institutional investors. These stakeholders are important because of their power, urgency, and legitimacy (Mitchell et al 1997). Consumers ultimately determine the demand for a firm's products

---

[1] We analyze alternative firm-level risks in the "Additional analyses" section.

and may hold it accountable for its actions (Bhattacharya and Sen 2003; Sen and Bhattacharya 2001). Institutional investors, due to their typically large ownership of the firm's stock, hold power over firm decisions and have direct access to firms' top executives (Cillo et al. 2018). Prior research finds that top executives spend, on average, a month a year managing their relationships with institutional investors (Brockman et al. 2017), as they are a critical lynchpin of a firm's success. Our focal construct pertaining to consumers is customer-based brand equity (CBBE), which refers to "the differential effect of brand knowledge on consumer response to the brand's marketing" (Keller 1993, p. 2) and is operationalized by the average of the eight YouGov metrics: buzz, impression, perceived quality, recommendation, reputation, satisfaction, perceived value, and purchase intent. Our focal construct related to investors is institutional investor ownership (IIO), operationalized by the percentage of outstanding shares owned by institutional investors.

We argue that E, S, and G performances are likely to have diverging associations with CBBE and IIO because consumers and institutional investors may evaluate E, S, and G performances differently. Indeed, previous research argues that stakeholder interests and priorities often diverge significantly (Donaldson and Preston 1995), even on the same issue (Wolfe and Putler 2002). This intuition is supported by both recent industry reports highlighting diverging preferences of consumers and investors for E, S, and G (Statista 2023; YouGov 2023) and academic literature on corporate social responsibility (CSR) initiatives that shows that doing well by doing good does not always sit well with stakeholders (Sodhi 2015; Torelli et al. 2012). We posit that the reason behind this divergence is that consumers consider firms' motives behind E, S, and G performances while institutional investors focus on assessing the expected financial returns. Specifically, we propose that consumers reward E and S performances because they perceive the underlying firm's motives to be other-centered and penalize G performance because they perceive the underlying firm's motives to be self-centered. By contrast, we argue that institutional investors reward G performance because it improves a firm's business operations and penalize E and S performances because they are costly and might not be profitable. Finally, as consumers and institutional investors play a crucial role in reducing firm risks (Luo et al. 2014; Tuli and Bharadwaj 2009), CBBE and IIO may mediate the relationship between E, S, and G performances and idiosyncratic risk. Accordingly, we aim to answer the following research questions:

1. How are E, S, and G performances differentially related to CBBE and IIO?
2. Do CBBE and IIO mediate the relationships between E, S, and G performances and idiosyncratic risk?

To answer these questions, we estimate a system of equations on a data set of 10,248 firm-quarter observations from 416 unique firms spanning from Q4 2012 to Q3 2020, assembled using six databases. Our empirical analysis shows that E, S, and G performances relate differently to CBBE and IIO, which

aligns with our theorization that consumers focus on firm motives and investors focus on expected financial returns. E performance is positively (negatively) associated with CBBE (IIO), while G performance is negatively (positively) associated with CBBE (IIO). We also find a negative association between S performance and IIO.

Our study offers several insights. The finding that E, S, and G have contrasting associations with two different stakeholders advances the literature on stakeholder management and ESG, as previous research has predominantly focused on the aggregate-level impact of ESG on a single stakeholder (Kraft et al. 2022; Luo and Bhattacharya 2006; Nofsinger et al. 2019; Pu et al. 2024; Sen and Bhattacharya 2001). We address the increasing calls from practitioners to separate E, S, and G (Tett and Temple-West 2022) and respond to the growing demand in stakeholder management literature to include a variety of stakeholders in empirical research (Fairchild et al. 2023; Jacobs and Singhal 2020; Sodhi 2015; Wang et al. 2021). Our findings suggest that firms must navigate trade-offs between satisfying consumers and meeting the expectations of institutional investors in product and capital markets.

Second, we contribute to the literature examining the link between ESG and risk. Previous research has emphasized the role of ESG performance in risk management but reported mixed results (see E-Companion Appendix A); notably, only a handful of prior studies on ESG have examined the underlying mechanism (e.g., Bai and Astvansh 2025). Heeding recent calls for more emphasis on the potential mechanisms underlying relationships in marketing–finance literature (Edeling et al. 2021; Malshe et al. 2020), we show mediating paths from E, S, and G performances to idiosyncratic risk through consumers and institutional investors. We find that E performance reduces (increases) idiosyncratic risk while G performance increases (reduces) idiosyncratic risk through CBBE (IIO). S performance increases idiosyncratic risk through IIO. By identifying different paths through which E, S, and G performances are related to idiosyncratic risk, we advance the literature on the relationships between these performances and firm risk (e.g., Izcan and Bektas 2022; Jacobs et al. 2016; Li et al. 2021). In practice, executives should consider the trade-offs of E, S, and G performances given multiple stakeholders.
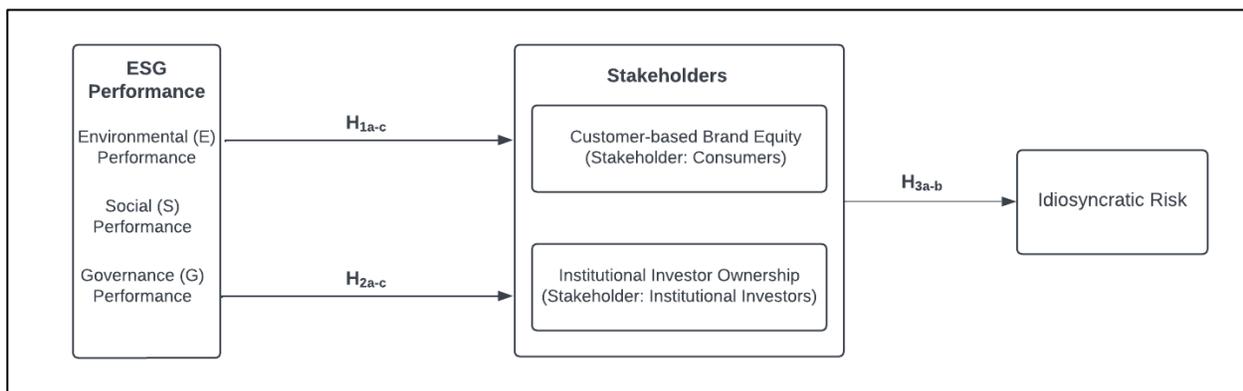
Conceptual Framework

Figure 1 shows our conceptual framework. We first discuss the role of E, S, and G performances for a firm's two primary stakeholders: consumers and institutional investors. We then test the mediating role of consumers and institutional investors in the links between E, S, and G performances and idiosyncratic risk.

Key Constructs: E, S, and G Performances

ESG performance reflects the valence of publicly available information about the firm's ESG policies, actions, and outcomes. It is a multidimensional construct that comprises distinct E, S, and G performances.[2] The distinctions between E, S, and G come directly from the corporate reporting standard set forth by the Sustainability Accounting Standards Board (SASB, 2023).[3] Cumulatively, ESG comprises 26 individual categories. E performance pertains to a firm's approach to managing its environmental impacts through six categories. S performance pertains to a firm's social or societal impacts through ten categories. Finally, G performance pertains to a firm's practices to uphold ethical standards in its management and handling various risks and opportunities associated with its business operations, assessed through ten categories. Table 1 summarizes the definitions of E, S, and G performances, the categories, and our theoretical arguments.[4]

Figure 1. Conceptual framework.

Stakeholder Management Theory as a Theoretical Lens

Our conceptual framework is grounded in stakeholder management theory, which postulates that firms must also cater to multiple stakeholder interests beyond merely maximizing shareholder wealth (Donaldson and Preston 1995; Freeman 1984). Stakeholders are "individuals or groups who are affected by, or whose actions can directly affect, a firm's operation" (Freeman 1984, p. 25). Focusing on stakeholders allows firms to gain a competitive advantage, which eventually results in superior firm performance (Donaldson and Preston 1995; Freeman 1984).

---

[2]In this research, we take a broader perspective and consider overall opinions of multiple stakeholders, including consumers, investors, employees, and media. We operationalize ESG performance using a data set from Factset TruValue Labs (TVL), which is a third-party data provider. We provide further details in the "Methods" section and E-Companion Appendix B.

[3]Thousands of firms globally use this standard; it has also been adopted by the International Sustainability Standards Board (https://sasb.org/company-use/).

[4]Prior research has focused on related dimensions of CSR and its outcome, corporate social performance, which differs from ESG performances, as we summarize in E-Companion Appendix C.

Within stakeholder management theory, we pursue an *instrumental stakeholder approach*, which is apt for explaining how a particular firm's behavior results in performance outcomes (Sodhi 2015; Donaldson and Preston 1995). The instrumental stakeholder approach is performance-oriented, as it focuses on managing key stakeholders who control the firm's resources (Bhattacharya and Sen 2003; Sen and Bhattacharya 2001). This approach aligns with our study's objective to link E, S, and G performances to consumers and institutional investors and, ultimately, firm risk (Sodhi 2015).

Table 1. Summary of E, S, and G Performances.

	E Performance	S Performance	G Performance
Definition	Relates to a firm's approach to managing impacts on the natural environment, including air, land, and water.	Relates to a firm's social or societal impacts.	Relates to a firm's practices to uphold ethical standards in its management, as well as its handling of the diverse risks and opportunities associated with its business operations.
Items from SASB	1. Air quality 2. Ecosystems and biodiversity 3. Energy consumption 4. Greenhouse gas emissions 5. Water usage and wastewater discharge 6. Solid waste management	1. Product and service access and affordability 2. Customer privacy 3. Customer welfare 4. Product quality and safety 5. Selling practice and product labeling 6. Employee engagement, diversity, and inclusion 7. Employee health and safety 8. Data security 9. Human rights and community relations 10. Labor practices	1. Business model resilience 2. Material sourcing and efficiency 3. Physical impacts of climate change 4. Product design and life-cycle management 5. Supply chain management 6. Critical incident risk management 7. Competitive behavior 8. Business ethics 9. Management of legal and regulatory environment 10. Systematic risk management
Our theoretical arguments	Consumers perceive it as other-centered. Institutional investors expect it to subtract resources from main business operations.	Consumers perceive it as other-centered. Institutional investors expect it to subtract resources from main business operations.	Consumers perceive it as self-centered. Institutional investors expect it to focus resources on main business operations.

Primary Firm Stakeholders: Consumers and Institutional Investors

We focus on consumers and institutional investors for two reasons. First, consumers and institutional investors are firms' primary stakeholders (Freeman 1984; Homburg et al. 2013), or those with the highest power, legitimacy, and urgency (Mitchell et al.1997). Consumers are not only the most salient stakeholder in the marketing literature (Martin 2009; Rubera and Kirca 2017) but also an important stakeholder in the business strategy field (Sodhi 2015; Lamin and Zaheer 2012). Indeed, consumers are legitimate stakeholders because they ultimately determine the demand for a firm's products and may hold the firm accountable for its actions (Bhattacharya and Sen 2003; Sen and Bhattacharya 2001). Consumers are also important stakeholders because the firm urgently needs them to buy its products and services (Mitchell et

al. 1997). Overall, research argues that consumers are at the heart of firms' strategic decisions and should be a key focus of firms' stakeholder orientation (Martin 2009).

Institutional investors[5] have significant power because of their ownership of the firm and have legitimacy from their direct access to firms' top executives (Cillo et al. 2018; Freeman 1984). Brockman et al. (2017) note that companies attend multiple investor conferences a year and that chief executive officers (chief financial officers) spend, on average, 17 (26) days per year on such investor relations. Institutional investors are also urgent stakeholders as they hold a large percentage of the firm's stock (Cillo et al. 2018), so their opinions necessitate close and immediate attention from firms.

Second, consumers and institutional investors are likely to have asymmetric reactions to each E, S, and G performance and thus present an intriguing contrast. Prior literature finds that stakeholder interests and priorities are often not aligned (Donaldson and Preston 1995; Wolfe and Putler 2002). As such, management studies have called for investigating the heterogeneous reactions of stakeholder groups to firms' stances on political and social issues (Fairchild et al. 2023; Jacobs and Singhal 2020; Wang et al. 2021). Recent industry reports also show that consumers and investors have different preferences for firms' E, S, and G performances (Statista 2023; YouGov 2023), and news articles highlight the difference in how consumers and institutional investors react to firms' governance performance (e.g., Wills 2023).

We posit that these differences arise because consumers and institutional investors are likely to focus on different aspects when they evaluate firms' E, S, and G performances (Aksoy et al. 2022). Consumers evaluate firm performance on the basis of the perceived motives underlying firm actions (Chernev and Blair 2015; Ellen et al. 2006). While managers describe a firm's motives as dual (i.e., serving both economic and social goals), managers believe consumers often view them as *either* self-serving or reflecting sincere social concerns (Drumwright 1996). Along these lines, we argue that consumers form perceptions of the *underlying motives* of a firm's E, S, and G performances. Indeed, CSR research organizes motives into "self-serving" or "firm-serving" and "society-serving" or "public-serving" buckets (Lichtenstein et al. 2004). Conversely, institutional investors evaluate a firm depending on their expectations of its future cash flows. Thus, they scrutinize the firm's actions by assessing whether it focuses on core business operations that can lead to better financial results. In other words, institutional investors evaluate whether and to what extent each E, S, and G performance will affect the firm's costs, revenues, and cash flows (Edeling et al. 2021). We expect institutional investors to reward firms that focus on themselves (i.e., core operations) through G performance and punish firms that focus on others (E and S performances).

---

[5]Individual investor participation in the stock market has reached 20% by volume of stock traded (Hajric and Graffeo 2021). Individual investors make their decisions based on familiarity with the brands (Huberman 2001). Therefore, consumers and investors of well-known brands may overlap. To distinguish them, we focus on institutional investors, such as mutual funds, pension funds, and hedge funds.

E, S, and G Performances and CBBE

As we mention above, our focal construct for consumers is CBBE, which refers to "the differential effect of brand knowledge on consumer response to the brand's marketing" (Keller 1993, p. 2). Consumers are often highly skeptical of firms' ESG performances (Kraft et al. 2022), and the degree of this skepticism largely depends on how they perceive the motives behind a firm's actions associated with these performances. We argue that E, S, and G performances will have differential associations with CBBE depending on how consumers perceive the firm's *underlying motives* behind each performance. Previous research broadly classifies such motives into two groups: self-centered and other-centered (Ellen et al. 2006). We argue that if a firm engages in actions that typically and primarily benefit itself, consumers are likely to perceive the motives behind these actions as self-centered. By contrast, if a firm engages in actions that typically and primarily benefit others (e.g., individuals and communities external to the firm), consumers are likely to perceive the motives behind such actions as other-centered. This motive distinction is important because prior research shows that consumers respond positively to other-centered motives and negatively to self-centered motives (Chernev and Blair 2015; Ellen et al. 2006).

We hypothesize that E and S performances are positively related to CBBE because consumers are more likely to perceive motives behind a firm's actions associated with these performances as other-centered (vs. self-centered). E performance pertains to how a firm's efforts reduce the environmental impacts of its business operations (S&P Global 2019). Firms can achieve this by mitigating climate change concerns, improving energy consumption efficiency, promoting ecological justice, and using renewable resources. In turn, S performance captures firms' initiatives and practices aimed at improving relationships with customers, employees, and the communities where they conduct their businesses (S&P Global 2020). Higher S performance reflects effective engagement in social practices that focus on customer welfare and privacy, help improve working conditions, enhance diversity and inclusion, and reduce product liabilities. While such E and S performances can also benefit the firm, consumers may reasonably believe that the firm's motivation is primarily to benefit others, such as the community and society overall. For example, consumers exhibit a higher willingness to pay for products from firms associated with initiatives such as environmentally friendly circular take-back programs (Tari and Trudel 2024), which have broader societal benefits. Therefore, consumers are likely to perceive higher E and S performances as more altruistic, given their main goals and foci, resulting in a positive association with CBBE. Thus:

> H_{1a}: *E performance has a positive association with CBBE.*
> H_{1b}: *S performance has a positive association with CBBE.*

While consumers perceive the motives behind firms' actions associated with E and S performances as other-centered, we argue that consumers perceive the motives behind firms' actions associated with G performance as self-centered. The reason is that G performance pertains to firms' internal aspects such as internal accountability, management of legal and regulatory framework, material sourcing and efficiency, and business model resilience. In other words, improving G performance can be perceived by consumers as primarily motivated by the goal of enhancing the firm's internal operations and financial well-being, rather than as driven by a genuine commitment to broader societal benefits.

Relatedly, prior literature finds that consumers negatively evaluate firms' products when they believe that what the company does is driven by self-interest rather than by benevolence (Chernev and Blair 2015). Similarly, Ellen et al. (2006) show that consumers have a lower willingness to purchase from brands that engage in egoistic causes. Although these authors focus on the impact of self-centered actions on product quality and purchase intent, we expect the same logic to hold for G performance and CBBE. Thus:

H_{1c}: *G performance has a negative association with CBBE.*

E, S, and G Performances and IIO

Our focal construct for examining the role of E, S, and G performances for institutional investors is IIO, defined and measured as the percentage of a firm's outstanding shares owned by institutional investors. Given such ownership, institutional investors closely monitor the firm's business operations and disclosures and scrutinize firm actions in relation to the impact on financials such as costs, revenues, and cash flows (Boone and White 2015). Accordingly, we expect institutional investors to avoid investing in firms whose activities subtract resources from the firm's main business operations and reduce the firm's future cash flows (Bushee 2001). Therefore, we argue that the relationship between E and S performances and IIO is negative, while the relationship between G performance and IIO is positive.

Achieving superior E and S performances may signal to institutional investors that firms have subtracted resources from the core business operation (e.g., production, research and development [R&D]), which could reduce the firm's bottom line in the future. Improving E and S performances not only requires significant financial outlays (Nofsinger et al. 2019) but also might not be profitable for the firm (Morgenstern et al. 2001). For example, improving E and S performances requires substantial investment, such as switching to energy-efficient machinery, adopting sustainable supply chain practices, transitioning to renewable energy sources, and providing better benefits to employees. These initiatives can lead to higher costs; they may also divert the firm's resources from other potentially profitable investments that could generate higher immediate returns. Consequently, increasing E and S performances may reduce future cash flow, which can be perceived negatively by investors, potentially

leading to a decrease in institutional investors' ownership. Relatedly, previous studies on CSR show a nonsignificant impact of higher CSR scores on operating performance (Awaysheh et al. 2020; Garcia-Castro et al. 2011). A meta-analysis shows that superior E and S performances do not improve long-term financial performance (Margolis et al. 2009). Larcker and Watts (2020) find that the "green" premium for municipal bonds is zero, and Atz et al. (2023) report that, in general, the financial performance of ESG investing is indistinguishable from that of conventional investing. Therefore, as professional money managers, most institutional investors are unlikely to embrace environmental and social objectives at the cost of financial performance. Thus,

> H_{2a}: E performance has a negative association with IIO.
> H_{2b}: S performance has a negative association with IIO.

In contrast with E and S performances, G performance signals to investors that the firm is focusing on its main business operations. The categories of governance include business model resiliency, material sourcing and efficiency, critical incident risk management, systematic risk management, and legal and regulatory environment management, which are likely to be designed to directly protect and benefit investors by reinforcing business operations. Thus, organizational and procedural changes centered on core business operations are essential for improving governance performance. Consistent with our arguments, Chung and Zhang (2011) show that IIO increases with *corporate governance* quality. They identify financial and operating metrics disclosure as a core component of corporate governance. As more financial and operational metrics disclosure leads to more accurate firm valuation, investors prefer to invest in companies with better disclosure practices. Although our governance measure extends beyond Chung and Zhang's governance metrics, the underlying motivation in both operationalizations of governance is improving business model resiliency. Similarly, Ferreira and Matos (2008) find that institutional investors prefer to invest in firms with good corporate governance. Thus:

> H_{2c}: G performance has a positive association with IIO.

In summary, we expect E, S, and G performances to have different associations with CBBE and IIO. We expect the associations between E and S performances and CBBE to be positive because consumers likely perceive the underlying motives to be other-centered. However, we expect the associations between E and S performances and IIO to be negative, given their potential impact on core operations and the financial bottom line. By contrast, we expect the association between G performance and CBBE to be negative because consumers likely perceive the motives underlying it as self-centered. Conversely, we expect the association between G performance and IIO to be positive, as institutional investors are likely to believe that G performance directly benefits the firm's core operations and protects investors.

Mediating Roles of CBBE and IIO in the Link Between ESG and Idiosyncratic Risk

Firm risk is a fundamental metric for evaluating firm performance in capital markets (Edeling et al. 2021). ESG has attracted increasing interest from firms as a risk management strategy (Gorley 2022). We focus on idiosyncratic risk, reflecting the firm-specific risk unrelated to common risk factors (Moon et al. 2023) and accounting for the largest share of a firm's total risk (Goyal and Santa-Clara 2003). Idiosyncratic risk also holds significant importance for chief marketing officers' decisions and actions (Han et al. 2017). Consequently, both investors and managers are more concerned about idiosyncratic risk than systematic risk (Li et al. 2021).

Research shows that consumers' attitudes and IIO significantly affect firm risk (e.g., Luo et al. 2014; Rego et al. 2009; Tuli and Bharadwaj 2009). We argue that firms with a higher level of CBBE should have lower idiosyncratic risk because a higher level of CBBE facilitates consumers' repeat purchase behaviors through rapid product and service identification and decreased search costs (Keller 2003). In addition, a higher level of CBBE leads to stronger brand loyalty and lower customer churn (Chaudhuri and Holbrook 2001). These factors lower cash flow volatility, and consequently, idiosyncratic risk.

Similarly, we argue that firms with higher IIO will have lower idiosyncratic risk. Institutional shareholders have strong incentives to monitor firms' operations (Aral et al. 2023), and their monitoring is important for mitigating any potential agency problems between managers and shareholders (Shleifer and Vishny 1986). With larger stockholdings in firms, institutional investors have greater input in firm operations and decision making to ensure that management is acting in the best interests of shareholders. Consistent with this argument, Bhojraj and Sengupta (2003) show that institutional investors play an active role in reducing management opportunism. In addition, institutions are more likely to act as a stable force on the market for a firm's stocks (Bushee and Noe 2000). Large institutional investor holding indicates more stability and less vulnerability in a firm's cash flows, lowering the idiosyncratic risk (Luo et al. 2014).

Overall, we argue that E, S, and G performances are related to CBBE and IIO, which in turn are related to idiosyncratic risk. This implies that CBBE and IIO mediate the association between E, S, and G performances and idiosyncratic risk. Thus, we propose the following mediation hypotheses:

H_{3a}: CBBE mediates the association between E, S, and G performances and idiosyncratic risk.

H_{3b}: IIO mediates the association between E, S, and G performances and idiosyncratic risk.

E, S, and G performances may also have direct relationships with idiosyncratic risk, even when we account for their effects through CBBE and IIO. However, the directionality of these direct effects is difficult to ascertain *ex ante*. On the one hand, superior E, S, and G performances may help firms lower reputational and regulatory risks, reducing idiosyncratic risk. On the other hand, achieving higher E, S,

13

and G performances requires significant cash outflows, which can deplete a firm's cash reserves. Firms with lower cash flows find managing unexpected expenses challenging (Opler et al. 1999). Lower cash flows also expose firms to the predatory actions of competitors. Finally, lower cash flows could prevent companies from reducing their debt burden and making necessary long-term investments. All these issues are likely to increase a firm's idiosyncratic risk. These opposing relationships make it unclear whether E, S, and G performances have a direct association with idiosyncratic risk. Therefore, we do not explicitly depict a direct path from E, S, and G performances to idiosyncratic risk in Figure 1.

Methods

Data

To test our conceptual framework, we collected data from six different sources. We acquired firm-level E, S, and G performances from FactSet Truvalue Labs (TVL), a provider of corporate ESG data and analytics. We obtained CBBE from YouGov BrandIndex and firms' advertising spending from Kantar Ad$pender. Finally, we collected stock market data from the Center for Research in Security Prices (CRSP), financial variables from Compustat, and IIO from Thomson/Refinitiv.

The data from TVL, YouGov BrandIndex, and CRSP are available on a daily basis, Kantar Ad$pender on a monthly basis, and Compustat and Thomson/Refinitiv on a quarterly basis. Therefore, we average each variable at the quarterly level before merging. The final merged data set consists of 10,248 firm-quarter observations from 416 unique firms from Q4 2012 to Q3 2020. We provide details of data merging in E-Companion Appendix D. Table 2 presents the variables, data sources, and previous research using these variables.

Table 2. Measures and Data Sources.

Variable	Purpose	Definition	Data Source	Examples of Supporting Literature
Idiosyncratic risk	Main dependent variable	The risk associated with firm-specific strategies that cannot be explained by changes in average market portfolio returns	CRSP	Luo and Bhattacharya (2009)
Customer-based Brand Equity (CBBE)	Main dependent variable	Customer-based brand equity based on the average of buzz, impression, perceived quality, recommendation, reputation, satisfaction, perceived value, and purchase intent	YouGov	Colicev et al. (2018)
Institutional Investor ownership (IIO)	Main dependent variable	Percentage of institutional investor ownership	Thomson/Refinitiv	Bayer et al. (2017)

Environmental performance	Main independent variable	Average of Pulse Scores across six E categories	Truvalue Labs	Serafeim and Yoon (2023), Henisz and McGlinch (2019)
Social performance	Main independent variable	Average of Pulse Scores across ten S categories	Truvalue Labs	Serafeim and Yoon (2023), Henisz and McGlinch (2019)
Governance performance	Main independent variable	Average of Pulse Scores across ten G categories	Truvalue Labs	Serafeim and Yoon (2023), Henisz and McGlinch (2019)
ESG volume	Control variable	The total number of unique ESG articles	Truvalue Labs	
Firm size	Control variable	Natural logarithm of total assets	Compustat	Rego, Billett, and Morgan (2009)
Advertising intensity	Control variable	Advertising spending divided by total sales	Kantar	Moon et al. (2023)
R&D intensity	Control variable	R&D spending divided by total sales	Compustat	Luo and Bhattacharya (2009)
Return on assets (ROA)	Control variable	The ratio of net income to total assets	Compustat	Kurt and Hulland (2013)
Sales growth	Control variable	The difference between current period sales and prior period sales divided by prior period sales	Compustat	Kurt and Hulland (2013), Kothari (2001)
Demand instability	Control variable	Standard error of the slope coefficient of time in the regression of industry sales on time for the prior five quarters	Compustat	Han et al. (2017)
Market share	Control variable	Market share of the firm	Compustat	Anderson et al. (2004)
Financial leverage	Control variable	Firm's total debt divided by the market value of the firm	Compustat	Malshe and Agarwal (2015)

Measures

Independent variables: E, S, and G performances

Following prior research (e.g., Henisz and McGlinch 2019; Serafeim and Yoon 2023), we operationalize E, S, and G performances using TVL data. We conceptually defined ESG performance as the valence of publicly available information about the firm's ESG policies, actions, and outcomes and argued that such performance is a multidimensional construct that comprises distinct E, S, and G performances. We find that TVL measures of ESG performance align well with our conceptualization of ESG performance for three reasons.

First, E, S and G performances from TVL are based on publicly available information about firms (vs. self-disclosed ESG performances[6]), allowing us to capture a comprehensive measure of how well firms are doing on ESG. TVL extracts a broad range of publicly available information on firms' ESG-related news, events, and practices spanning more than 100,000 online sources, including news articles,

---

[6] We also checked the correlation between ESG performance from TVL and ESG performance based on self-disclosed reports (https://www.bramvanderkroft.com/data). We obtain a reasonable correlation of 0.44.

analyst reports, trade journals and industry publications, watchdog groups, and social media, while excluding company disclosures.[7] Therefore, TVL data incorporate comprehensive information that aligns with our conceptualization of a firm's ESG performance. Second, to the best of our knowledge, TVL is the only data provider using SASB classification of E, S, and G items. TVL organizes ESG-related information into one or more of the 26 categories following the guidelines of the SASB, which the International Sustainability Standards Board has also adopted.[8] E-Companion Appendix B provides the definitions of the 26 categories. The categorization allows us to separately capture E, S, and G performances for each firm. Specifically, we combine six categories related to the environment as E performance; ten categories related to social capital and human capital as S performance; and ten categories related to business model, innovation, leadership, and governance as G performance. Third, TVL is available at the most detailed temporal frequency (daily), which aligns with our empirical strategy to estimate the impacts of E, S, and G performances on consumers, institutional investors, and idiosyncratic risk.

We use TVL's firm-level measure called the "Pulse Score" on each E, S, and G performance (Factset TruValue Labs 2021). The Pulse Score captures the valence of publicly available information about the firm's ESG policies, actions, and outcomes (Badawi and Partnoy 2022). TVL employs natural language processing (NLP) to interpret the semantic content of information and assigns the resulting Pulse Score to each ESG information source listed above. Pulse Score ranges from 0 (most negative) to 100 (most positive), which reflects the degree of positivity or negativity (Factset TruValue Labs 2021). Given the range, a Pulse Score above 50 indicates positive performance and a score below 50 reflects negative performance. The NLP algorithms assign such scores in a consistent manner on the basis of the semantic content across a firm's ESG-related news, events, and practices. For example, the NLP algorithms assign a significantly more negative score to a catastrophic oil spill that affects multiple workers and communities than to a minor workplace incident resulting in a single injury (Serafeim and Yoon 2023).

Dependent variable: CBBE

Our measure of CBBE comes from YouGov BrandIndex, which monitors multiple brands in different industries and has been commonly used in marketing (e.g., Colicev et al. 2018; Rajavi et al. 2024; Stäbler and Fischer 2020). YouGov surveys approximately 5,000 randomly selected consumers (from a panel of 5 million) daily and weighs the sample respondents by age, gender, race, education, income, and region to

---

[7] With the increased availability of ESG-related information (Serafeim and Yoon 2023), consumers and institutional investors are increasingly exposed to information on firms' E, S, and G policies, actions, and outcomes. Such E, S, and G information is available in the online sources, including news articles, analyst reports, trade journals and industry publications, watchdog groups, and social media (Factset TruValue Labs 2021).
[8] https://sasb.ifrs.org/sasb-your-pathway-to-issb/.

ensure representativeness. Following YouGov's methodology and previous research (Stäbler and Fischer 2020), we create a metric for CBBE based on YouGov's definition and use the following eight YouGov metrics: buzz, impression, perceived quality, recommendation, reputation, satisfaction, perceived value, and purchase intent. We provide the survey process and definitions of these metrics in E-Companion Appendix E. At the aggregated firm level, these metrics range from –100 to +100. We use the average of the eight metrics to measure CBBE.

Dependent variable: IIO

We measure IIO as the percentage of outstanding shares owned by institutional investors, which is the primary measure of institutional investor behavior in previous research (e.g., Bayer et al. 2017; Cillo et al. 2018). We set the missing values of IIO to 0.

Dependent variable: Idiosyncratic risk

Idiosyncratic risk reflects an individual firm's stock return volatility (Moon et al. 2023). We estimate idiosyncratic risk for each firm each year-quarter using Carhart's (1997) four-factor model with daily return data from CRSP (Luo and Bhattacharya 2009):

$$(1)\ R_{id} - R_{fd} = a_i + \beta_i^{MKT} r_d^{MKT} + \beta_i^{SMB} r_d^{SMB} + \beta_i^{HML} r_d^{HML} + \beta_i^{UMD} r_d^{UMD} + \varepsilon_{id},$$

where R_{id} is the daily return on stock of firm i on day d, R_{fd} is the risk-free return on day d, β_i^{MKT} is market risk, β_i^{SMB} is size risk, β_i^{HML} is value risk, and β_i^{UMD} is momentum risk. The residual of the model is a measure of the firm's idiosyncratic risk. We operationalize idiosyncratic risk as the variance of the residuals $[\frac{1}{n} \times (\sum_d^n \varepsilon_{id}^2)]$, where n denotes the number of days over which the model is estimated in a year-quarter for a given firm. We use the past one quarter's daily stock returns to estimate Equation 1 for every firm-year-quarter.

Control variables

We include a comprehensive set of control variables based on previous research. First, we control for firm size, measured as the natural log of total assets (Rego et al. 2009). Second, we control for advertising intensity and R&D intensity because previous studies suggest that they are negatively related to firm idiosyncratic risk (Han et al. 2017; Luo and Bhattacharya 2009; Moon et al. 2023). Third, we control for accounting performance metrics such as ROA and sales growth as they may affect stock returns (Kothari 2001; Kurt and Hulland 2013). Fourth, we control for market share, as firms with higher market share have higher firm value (Anderson et al. 2004). Fifth, we control for financial leverage as studies show that it is associated with idiosyncratic risk and firm value (e.g., Ferreira and Laux 2007; Malshe and Agarwal 2015). Sixth, we control for demand instability, which can affect the relationship between a firm's strategic emphasis and idiosyncratic risk (Han et al. 2017). Finally, we control for the volume of ESG-related news, events, and practices that TVL collects for each firm. Such ESG volume measure quantifies

the total count of unique firm-specific ESG articles over a 12-month trailing period and controls for whether some firms have more exposure to ESG news than others.

Empirical Model and Estimation Strategy

Overview of the Empirical Strategy

Our empirical strategy consists of several steps. First, our model comprises a system of three main equations with idiosyncratic risk, CBBE, and IIO as dependent variables. We estimate this system of equations jointly, as described subsequently. Second, to test the mediating roles of CBBE and IIO and alleviate reverse causality concerns, we set a gap of one quarter between the dependent and independent variables. Thus, for every firm in quarter *t*, we set idiosyncratic risk at the same quarter *t*; CBBE and IIO at quarter *t* – 1; and firms' E, S, and G performances and other control variables at quarter *t* – 2. Third, to mitigate a potential omitted variable bias, we include control variables (described in the previous section). Fourth, we eliminate firm fixed effects by subtracting the time-series mean of each variable (calculated separately for each firm) from all observations of that variable corresponding to the same firm. Removal of firm fixed effects retains within-firm variation over time. This approach is computationally more efficient for our estimation method and econometrically equivalent to including dummy variables for each firm in the regression (Wooldridge 2010). Fifth, we control for time fixed effects by including year-quarter dummies. Sixth, we include a selection equation in our system of equations to account for a potential selection bias, as YouGov might select firms by their quarterly firm revenues (Malshe et al. 2020). Finally, we use a control function approach to alleviate possible endogeneity concerns about firms' unobserved strategic behaviors. Table 3 shows the correlations for all variables after removing firm fixed effects and means and standard deviations of all the variables before removing firm fixed effects for easier interpretation.

Main Equations

We model firm idiosyncratic risk as a function of CBBE; IIO; the firm's E, S, and G performances; and several control variables:

$$(2) \ IR_{it} = \theta_0 + \theta_1 CBBE_{it-1} + \theta_2 IIO_{it-1} + \theta_3 Env_{it-2} + \theta_4 Soc_{it-2} + \theta_5 Gov_{it-2} + \theta_6 CF\_Env_{it-2} + \theta_7 CF\_Soc_{it-2} + \theta_8 CF\_Gov_{it-2} + \tilde{\theta} \ CTRL2_{it-2} + \theta\Sigma \ Time \ Dummy + \varepsilon1_{it},$$

where for each firm *i* in quarter *t*, $CBBE_{it-1}$ is CBBE, IIO_{it-1} is IIO, and $CTRL2_{it-2}$ represents all the control variables appearing in Table 2. In addition, Env_{it-2} is the firm's E performance, Soc_{it-2} is the firm's S performance, and Gov_{it-2} is the firm's G performance. The terms CF_Env_{it-2}, CF_Soc_{it-2}, and CF_Gov_{it-2} are control function corrections to account for endogeneity, which we describe in the following section, and $Time \ Dummy$ is a set of year-quarter dummy variables.

We model CBBE and IIO as a function of a firm's E, S, and G performances and control variables:

(3) $CBBE_{it-1} = \alpha_0 + \alpha_1 Env_{it-2} + \alpha_2 Soc_{it-2} + \alpha_3 Gov_{it-2} + \alpha_4 CF\_Env_{it-2} + \alpha_5 CF\_Soc_{it-2} + \alpha_6 CF\_Gov_{it-2} + \tilde{\alpha}\ CTRL2_{it-2} + \alpha\Sigma\ Time\ Dummy + \varepsilon2_{it-1}.$

(4) $IIO_{it-1} = \beta_0 + \beta_1 Env_{it-2} + \beta_2 Soc_{it-2} + \beta_3 Gov_{it-2} + \beta_4 CF\_Env_{it-2} + \beta_5 CF\_Soc_{it-2} + \beta_6 CF\_Gov_{it-2} + \tilde{\beta}CTRL2_{it-2} + \beta\Sigma\ Time\ Dummy + \varepsilon3_{it-1}.$

Addressing Endogeneity

Selection bias

We specify the selection equation following Malshe et al. (2020). We create a dummy variable "Selection" that equals 1 for the firms covered by YouGov and 0 for the firms not covered by YouGov:

$$(5a)\ Selection_{it-1} = \begin{cases} 0; & Firm_{it-1}\ \notin YouGov \\ 1; & Firm_{it-1}\ \in YouGov \end{cases}.$$

We model "Selection" as a function of the same control variables in the idiosyncratic risk, CBBE, and IIO equations, except for the log of total assets. We add the natural log of sales as the excluded variable from the three equations because YouGov is more likely to include firms with higher sales to gain visibility. Accordingly, the selection equation is as follows:

$$(5b)\ Selection_{it-1} = \pi_0 + \pi_1 \ln(Sales_{it-2}) + \tilde{\pi}\ CTRL1_{it-2} + \varepsilon4_{it-1},$$

where, for each firm *i* in quarter *t*, $Sales_{it-2}$ is the quarterly sales.

Firm strategic behavior

We use firm fixed effects to control for time-invariant firm-specific unobservable factors and year-quarter fixed effects to control for time-specific unobservable factors common to the cross-section of firms. However, E, S, and G performances may still be endogenous as the firms can strategically manage their E, S, and G performances. For example, executives may turn to proprietary information (unobservable to us) to determine the timing and extent of improvements in E, S, and G performances to lower the risk. We tackle the endogeneity concern about E, S, and G performances due to unobserved firm strategic behaviors by means of the control function approach (Petrin and Train 2010). We include three new variables that correspond to the three endogenous variables (E, S, and G performances) in Equations 2, 3, and 4, and we label each of the new variables as a control function correction. We argue that the potentially endogenous E, S, and G performances should be uncorrelated with the error terms conditional on the control function corrections. We regress potentially endogenous E, S, and G performances on the control variables and instruments to estimate control function corrections. Instrumental variables must fulfill two criteria: (1) they must be correlated with the endogenous independent variables (i.e., meet the relevancy criterion), and (2) they must not have a direct association with the dependent variable

Table 3. Descriptive Statistics and Correlations.

	M	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. E performance	43.25	15.98	1.00						
2. S performance	43.83	10.87	0.02*	1.00					
3. G performance	36.63	11.41	0.06***	0.08***	1.00				
4. Idiosyncratic risk	0.02	0.01	0.03**	-0.03***	-0.03**	1.00			
5. CBBE	9.99	7.97	0.01	0.01	0.00	-0.03**	1.00		
6. IIO	0.68	0.32	-0.05***	0.00	-0.01	-0.08***	-0.01	1.00	
7. Firm size	9.26	2.19	-0.06***	-0.08***	-0.07***	0.06***	0.05***	-0.07***	1.00
8. Advertising intensity	0.01	0.03	-0.01	0.02*	0.03**	-0.07***	0.00	0.05***	-0.12***
9. R&D intensity	0.02	0.09	0.02†	0.03**	0.02*	0.00	0.00	0.00	-0.08***
10. ROA	0.03	0.03	-0.03**	0.00	0.01	-0.13***	-0.02†	0.14***	-0.10***
11. Sales growth	0.04	0.92	-0.01	0.00	0.02*	-0.01	0.01	0.02	-0.01
12. Demand instability	0.02	0.02	0.01	0.02*	0.01	-0.01	-0.03**	-0.12***	-0.06***
13. Market share	0.06	0.10	-0.02*	0.00	-0.05***	-0.02*	0.03**	-0.01	0.35***
14. Financial leverage	1.38	10.37	-0.01	0.00	0.01	0.13***	-0.05***	-0.05***	0.05***
15. ESG volume	828.02	2845.50	-0.01	-0.02*	-0.02*	0.03**	-0.06***	-0.13***	0.14***

	M	SD	(8)	(9)	(10)	(11)	(12)	(13)	(14)
8. Advertising intensity	0.01	0.03	1.00						
9. R&D intensity	0.02	0.09	0.00	1.00					
10. ROA	0.03	0.03	-0.03*	-0.32***	1.00				
11. Sales growth	0.04	0.92	-0.01	0.00	0.11***	1.00			
12. Demand instability	0.02	0.02	0.03**	0.02†	-0.09***	-0.02*	1.00		
13. Market share	0.06	0.10	-0.06***	-0.01	0.11***	0.04***	-0.07***	1.00	
14. Financial leverage	1.38	10.37	-0.03**	0.00	-0.04***	-0.01	0.01	0.00	1.00
15. ESG volume	828.02	2845.50	-0.01	-0.01	-0.03**	-0.01	0.02*	0.09***	0.01

†$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$. We used the variables without firm fixed effects to calculate correlations.

conditional on the endogenous independent variables (i.e., meet the exclusion restriction). In other words, the instruments should be related to the dependent variable (i.e., CBBE and IIO) only through the endogenous independent variables (i.e., E, S, and G performances).

Prior literature suggests that E, S, and G performances of peer firms can be relevant instruments because firms often benchmark their own actions against the actions of peer firms that operate in the same primary industries (Germann et al. 2015). To stay competitive, firms align their E, S, and G performances with peers (Modi and Cantor 2021) by imitating them to achieve legitimacy (Grewal and Dharwadkar 2002). However, in our context peer firms' E, S, and G performances may not satisfy exclusion restrictions as CBBE and IIO might be directly associated with them. For instance, investors might prefer peer firms' E, S, and G performances, thereby reducing their ownership in the focal firm. Thus, we need to identify alternative instrumental variables that satisfy both the relevancy and exclusion restriction criteria.

Bramoullé et al. (2009) suggest that "peers-of-peers" measures can be such relevant and valid instruments. For a focal firm, peers-of-peers firms are peers of the focal firm's peers, not members of the focal firm's own peer group (Shi et al. 2021). Unlike peer firms, peer-of-peer firms are relatively distant from the focal firm, making it unlikely that their E, S, and G performances directly affect CBBE and IIO. To support the theoretical relevance of excluded variables, we must also show that they are conceptually uncorrelated with omitted variables. Germann et al. (2015) argue that the actions of competitors are unlikely to be correlated with omitted variables unless the competitors are strategically taking actions against the focal firm. However, it is unlikely that peer-of-peer firms would coordinate their E, S, and G performances to harm the focal firm's E, S, and G performances, which suggests our excluded variables are uncorrelated with omitted variables.

We define a focal firm's peers (i.e., first-degree peers) as all the firms operating in the same two-digit Standard Industrial Classification (SIC) code as the focal firm. We define the focal firm's peers-of-peers (i.e., second-degree peers) as all the firms that are not operating in the same two-digit SIC code as the focal firm but are operating in the same two-digit SIC code as the focal firm's peers. We provide the details of firms' peers-of-peers identification in E-Companion Appendix F. The peers-of-peers firms' measures meet the relevancy criterion because the focal firm and its peers-of-peers firms are linked through common peer firms. They also meet the exclusion restriction because peers-of-peers firms affect the focal firm only indirectly through their effect on the common peer firms. We estimate the following equations using peers-of-peers firms' measures for E, S, and G performances:

$$(6)\ Env_{it} = \gamma_0 + \tilde{\gamma}\ CTRL2_{it} + \gamma_1 PP\_Env_{it} + \gamma_2 PP\_Soc_{it} + \gamma_3 PP\_Gov_{it} + CF\_Env_{it},$$

$$(7)\ Soc_{it} = \eta_0 + \tilde{\eta}\ CTRL2_{it} + \eta_1 PP\_Env_{it} + \eta_2 PP\_Soc_{it} + \eta_3 PP\_Gov_{it} + CF\_Soc_{it}, \text{and}$$

$$(8)\ Gov_{it} = \varphi_0 + \tilde{\varphi}\ CTRL2_{it} + \varphi_1 PP\_Env_{it} + \varphi_2 PP\_Soc_{it} + \varphi_3 PP\_Gov_{it} + CF\_Gov_{it},$$

where, for a focal firm i in quarter t, PP_Env_{it} is the average E performance, PP_Soc_{it} is the average S performance, and PP_Gov_{it} is the average G performance of peers-of-peers firms of the focal firm. We provide the details of the first-stage results in Table G1 in E-Companion Appendix G. Together, PP_Env_{it}, PP_Soc_{it}, and PP_Gov_{it} are strong instruments (first-stage F statistics are 157.38, 48.90, and 45.24, respectively; $p < .001$). Each endogenous variable is significantly and directionally related to its corresponding peers-of-peers instrument. We use the estimated error terms CF_Env_{it}, CF_Soc_{it}, and CF_Gov_{it} as control function corrections.

Model Estimation

To correct for the selection bias, we estimate the idiosyncratic risk, CBBE, and IIO equations conditionally on the selection equation. We use a conditional mixed process (CMP) estimator in Stata (Roodman 2011), commonly used in prior research (e.g., Bendoly et al. 2012; Mallapragada et al. 2016). CMP is a modeling framework based on maximum likelihood estimators; it enables conditioning on the selection, accommodates jointly estimating a mix of binary and continuous dependent variables, allows for a flexible error structure with cross-correlations among equations and the use of different dependent variables with unique distribution properties, and achieves greater efficiency (Breen 1996).

Results

Tables 4 presents the model results. This model corrects for selection bias and includes control variables, control functions, firm fixed effects, and year-quarter dummies.

Main results: test of hypotheses

In Table 4 Column 1, the natural log of sales is positive and statistically significant (.182, $p <$ .001), which indicates that firms with higher sales have a higher probability of YouGov coverage. In Column 2, Table 4, E performance is positively associated with CBBE (.053, $p < .05$), and G performance is negatively associated with CBBE (–.187, $p < .001$). Thus, we find support for H_{1a} and H_{1c}. We find no evidence supporting H_{1b}, as the coefficient of S performance on CBBE is nonsignificant (.005, $p > .1$). In Column 3, Table 4, we show that E performance (–.004, $p < .01$) and S performance (–.002, $p < .05$) are negatively associated with IIO. G performance is positively associated with IIO (.011, $p < .001$). Thus, we find support for H_{2a}–H_{2c}. In Column 4, Table 4, we report the results of Equation 2. We show that CBBE has a negative and significant association with idiosyncratic risk (–.011, $p < .001$). Similarly, IIO has a large negative and marginally significant association with idiosyncratic risk (–.153, $p < .10$). These results have implications for the mediation analysis, which we discuss in the next subsection. We find a negative

Table 4. Mediating Role of CBBE and IIO in ESG–Idiosyncratic Risk Link.

	1 Selection		2 CBBE		3 IIO		4 Idiosyncratic Risk	
E performance			.053*	(.023)	-.004**	(.001)	-.012†	(.007)
S performance			.005	(.018)	-.002*	(.001)	-.012†	(.007)
G performance			-.187***	(.043)	.011***	(.002)	.021	(.015)
CBBE							-.011***	(.002)
IIO							-.153†	(.082)
R&D intensity	.000***	(.000)	-.266	(.315)	.019	(.022)	-.556***	(.119)
ROA	-.016**	(.006)	-2.582†	(1.381)	.567***	(.094)	-5.911***	(.509)
Firm size			.959***	(.120)	.020*	(.008)	-.229***	(.061)
Market share	-2.862***	(.499)	2.916	(2.133)	-.424***	(.091)	.093	(.389)
Financial leverage	-.000*	(.000)	-.033***	(.006)	-.001	(.001)	.019**	(.006)
Advertising intensity	.033***	(.007)	.007	(.005)	-.000	(.000)	-.002	(.001)
Sales growth	-.000†	(.000)	.018	(.012)	.000	(.002)	.006	(.007)
Demand instability	-.197***	(.008)	.024	(.071)	.001	(.003)	.011	(.017)
Log (sales)	.182***	(.009)						
ESG volume			-.000*	(.000)	.000	(.000)	-.000*	(.000)
Control function correction for E			-.048*	(.023)	.004**	(.001)	.013†	(.007)
Control function correction for S			.002	(.018)	.002*	(.001)	.008	(.006)
Control function correction for G			.190***	(.043)	-.012***	(.002)	-.028†	(.016)
Intercept	-1.469***	(.005)	-.216	(.723)	-.655***	(.023)	.027	(.114)
ρ statistics			.002	(.115)	-.003	(.058)	-.003	(.062)
Control for firm-specific effects			Yes		Yes		Yes	
Control for time effects			Yes		Yes		Yes	
Adjusted R^2			.0172		.5818		.2205	

†$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Notes: Standard errors are in parentheses. The coefficients and standard errors in the "Idiosyncratic Risk" column are multiplied by 100. Log (sales) is an instrument in the selection equation. Control functions use peers-of-peers firms' E, S, and G performances as instruments.

and marginally significant association of E (–.012, $p < .10$) and S (–.012, $p < .10$) performances and a nonsignificant association of G performance (.021, $p > .10$) with idiosyncratic risk.

Mediating roles of CBBE and IIO

Table 5 summarizes the results of the mediation analysis with bootstrapping, and Figure 2 depicts the mediating role of CBBE and IIO in the ESG–idiosyncratic risk link. H_{3a} and H_{3b} hypothesize that CBBE and IIO, respectively, mediate the link between E, S, and G performances and idiosyncratic risk. To formally assess the mediating role of CBBE, we test the statistical significance of the products of the E, S, and G performances coefficients in Equation 3 (Column 2, Table 4) with the coefficient of CBBE in Equation 2 (Column 4, Table 4). Similarly, to formally evaluate the mediating role of IIO, we test the statistical significance of the products of the E, S, and G performances coefficients in Equation 4 (Column 3, Table 4) with the coefficient of IIO in Equation 2 (Column 4, Table 4). Following Preacher and Hayes (2004), we draw 1,000 bootstrap samples with replacement to obtain 95% confidence intervals (CIs) for the indirect effects. The 95% CIs for E performance (–.00060, 95% bootstrap CI [–.00132, –.00015]) and G performance (.00208, 95% bootstrap CI [.00103, .00392]) on idiosyncratic risk through CBBE do not include zero. The 95% CIs for E performance (.00061, 95% bootstrap CI [.00005, .00191]), S performance (.00029, 95% bootstrap CI [.00001, .00097]), and G performance (–.00170, 95% bootstrap CI [–.00449, –.00011]) on idiosyncratic risk through IIO do not include zero. Thus, H_{3a} and H_{3b} are supported.

Table 5. Indirect Effects of E, S, and G Performances on Idiosyncratic Risk.

	Indirect Effect on Idiosyncratic Risk Through	
	CBBE	IIO
E performance	–.00060[a] [–.00132, –.00015]	.00061[a] [.00005, .00191]
S performance	–.00006 [–.00050, .00034]	.00029[a] [.00001, .00097]
G performance	.00208[a] [.00103, .00392]	–.00170[a] [–.00449, –.00011]

[a]95% bootstrap CI does not include zero. The coefficients are multiplied by 100.

Figure 2. Mediating role of CBBE and IIO in the ESG–idiosyncratic risk link.
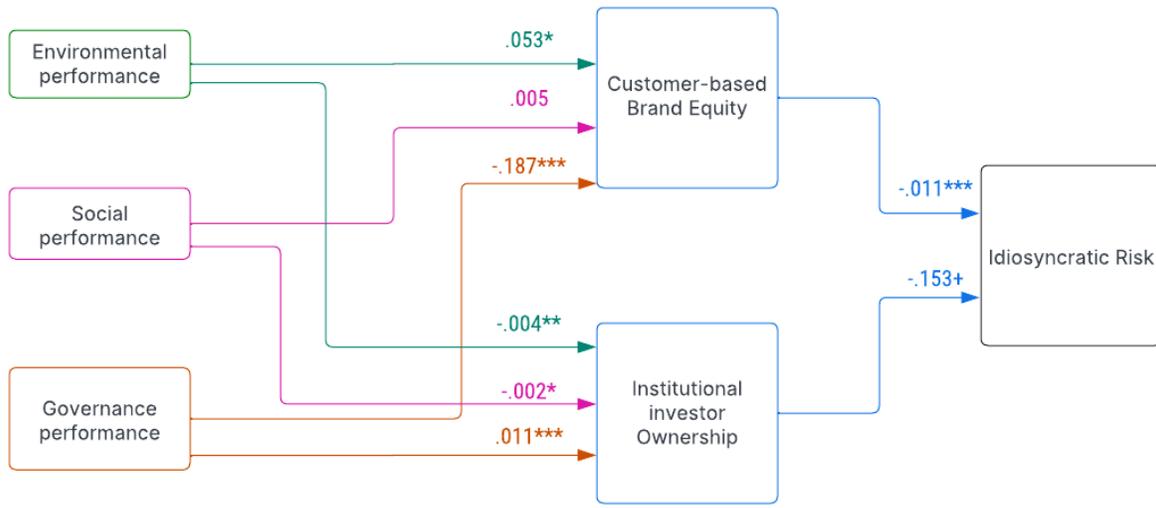
Robustness Checks of the Main Model

First, to assess the robustness of our results, we replaced the averages of categories of E, S, G performances, and CBBE with the PCA scores and reported the results in E-Companion Appendix G Table G2. We find that the results continue to hold (only the association of the S performance and IIO is no longer significant at the conventional level). Second, instead of using peers-of-peers firms' ESG measures as instruments, we used average E, S, and G performances of peer firms (firms that operate in a focal firm's same two-digit SIC code) as instruments (e.g., Germann et al. 2015). E-Companion Appendix G Table G3 shows that all the results continue to hold. Third, we used an alternative estimation method and E-Companion Appendix G Table G4 shows our findings continue to hold.

Additional Analyses

The role of additional stakeholders

Our main analysis focuses on two primary stakeholders, consumers and institutional investors. Drawing on stakeholder management theory, we identified employees as an additional primary stakeholder and media as a secondary stakeholder (Welch and Yoon 2022). E-Companion Appendix G Table G5 shows that our main results continue to hold after we test employee reputation and media sentiment metrics. In addition, we found negative associations between E and S performances and media sentiment and a positive association between G performance and media sentiment; we also found a marginally significant and positive relationship between S performance and employee reputation.

Alternative firm-level risk measures

In addition to idiosyncratic risk, which is firm-specific and an important performance dimension associated with chief marketing officers' decisions and actions (Han et al. 2017; Rogers 2019), we

examined the associations of E, S, and G performances with other firm-level risk measures, including total risk, analysts' earnings forecast dispersion, and bankruptcy risk. These measures reflect a firm's vulnerability-related risk from debt holders' perspective and variability-related risk from equity holders' perspective (Rego et al. 2009) and alleviate concerns that depending solely on Carhart's (1997) four-factor model for idiosyncratic risk assessment might be overly restrictive (Tuli and Bharadwaj 2009). Our major findings continue to hold with different risk measures as shown in E-Companion Appendix G Table G6-G8.

Discussion

This research shows that E, S, and G performances are differentially associated with CBBE and IIO and that CBBE and IIO mediate the link between E, S, and G performances and firm idiosyncratic risk. Overall, our findings highlight the importance of (1) analyzing the granularity in E, S, and G performances given their asymmetric associations and (2) examining multiple firm stakeholders (e.g., consumers, institutional investors) separately given their diverging preferences.

Theoretical Contributions

Our research makes several contributions to the literature on stakeholder management, ESG, and firm risk. First, we show that separate dimensions of ESG performance have asymmetric associations with different stakeholders – namely, consumers and institutional investors. Previous studies have repeatedly called for incorporating multiple stakeholders in empirical research (Fairchild et al. 2023; Wang et al. 2021) given stakeholders' divergent priorities, interests, and expectations (Donaldson and Preston 1995; Wolfe and Putler 2002). Indeed, we find opposing associations between E, S, and G performances and consumers and institutional investors, which contributes to current research on ESG and stakeholder relationships (e.g., Aksoy et al. 2022; Lamin and Zaheer 2012; Nofsinger et al. 2019; Jacobs and Singhal 2020).

Second, although practitioners have emphasized the role of ESG performance in risk management (Gorley 2022), previous studies yield mixed results (see E-Companion Appendix A). Our findings shed light on this inconsistency by demonstrating that consumers and institutional investors respond differently to E, S, and G performance, thereby helping explain mixed findings in previous studies. Moreover, our result highlights the mediating role of consumers and institutional investors as primary stakeholders in the relationship between E, S, and G performances and idiosyncratic risk, advancing the research stream exploring the mechanisms through which ESG may affect firm performance (Bai and Astvansh 2025). This also aligns with recent calls for greater emphasis on uncovering the potential mechanisms (vs. only direct effects) that underlie the relationships in marketing–finance interface literature (Edeling et al. 2021; Malshe et al. 2020).

Our findings also add to the nascent stream of literature linking firm strategies to firm-specific risks (Jacobs et al. 2016; Jindal 2020; Jindal and McAlister 2015) as we also explore other firm risk measures, including bankruptcy risk, total risk, and analysts' earnings forecast dispersion, which are underexamined in the strategy literature. Although in theory firm-specific risk can be diversified away, diversification is difficult or sometimes impossible in practice. For example, in most cases, employees cannot diversify away from their employers' bankruptcy risks as their jobs might be their only source of income.

Managerial Implications

This research highlights an important challenge that managers of publicly listed firms face (Pérez et al. 2022). Which of the E, S, and G performances should they focus on to cater to the divergent preferences of stakeholders? Consumers and institutional investors may care about different aspects of ESG. Therefore, managers need to account for inevitable trade-offs between serving consumers and institutional investors to meet their goals in product and capital markets. If managers want to prioritize consumers, they should emphasize E performance. Given the negative association between CBBE and firm risk, investing in E performance can reduce risk. For example, private firms may not have any institutional investors. For such firms, consumers are primary stakeholders, and therefore achieving superior E performance and not pursuing higher G performance is a better strategy. However, in firms where institutional investors hold significant influence, prioritizing E performance could potentially reduce their ownership, thereby increasing idiosyncratic risk. In addition, S performance is not significantly associated with CBBE but is negatively and significantly associated with IIO, possibly because of its high costs and uncertain benefits. Indeed, while firms experience IIO decreases on average with higher S performance, managers may well decide it is the right thing to do for their employees and communities. For example, Disney boasts more than 11,000 employees enrolled in its education program Aspire, covering 100% of school tuition, books, and fees, with onsite "study hall" spaces and private career coaching (Hope 2022). Altruistic private and institutional shareholders can accept higher risk for the satisfaction of investing in firms that treat employees better. Heated debates about such trade-offs regularly make headlines, such as accusations that Unilever's management is "obsessed with publicly displaying sustainability credentials at the expense of focusing on the fundamentals of the business" (Naidu and Kerber 2022).

The findings for G performance reveal a noteworthy pattern—G performance is associated negatively with CBBE and positively with IIO. Moreover, while industry reports and policy debates (Strine et al. 2022) point out that G performance is the most overlooked of the ESG factors, our findings show that among the three ESG performances, G performance seems to matter the most for consumers, institutional investors, and idiosyncratic risk. Thus, if firms want to please institutional investors and

reduce idiosyncratic risk, even to the detriment of consumers, they should focus on governance. This suggestion is consistent with reports claiming that governance can help firms achieve better overall ESG performance (Peshawaria 2022).

A crucial takeaway of our study is that managers need to be aware of inevitable trade-offs regarding ESG. They need to evaluate which stakeholders they want to cater to, decide on which ESG performance to leverage, and account for the competitive intensity of the market in which they operate. We recommend that managers focus on E, S, and G performances that better align with their firms' policies and ethics.

Future Research Avenues

Our study opens several avenues for future research. First, although consumer and institutional investors are the most likely stakeholders to care about ESG, stakeholder management theory hints that several other stakeholders can also play a role. While we included employees and media as stakeholders in additional analyses, future studies might consider other stakeholders, such as suppliers, which need to coordinate their efforts with firms to comply with regulations for ESG reporting, and the government agencies responsible for enforcing ESG policies. In addition, another potential mediating mechanism could stem from how E, S, and G performances could lead to operational risk, strengthen financial performance, or offer better partnerships to supply chain partners. Second, we considered the role of additional moderators – competitive intensity and environmentally sensitive industries – but future research should also explore other possible moderators that affect a firm's resources and thereby affect those motives and expectations.

References

Aksoy, L., S. Banda, C. Harmeling, T. L. Keiningham, A. Pansari. 2022. Marketing's role in multi-stakeholder engagement. *International Journal of Research in Marketing* **39**(2): 445–461.

Anderson, E. W., C. Fornell, S. K. Mazvancheryl. 2004. Customer Satisfaction and Shareholder Value. *Journal of Marketing* **68**(4): 172–185.

Aral, K., E. Giambona, L. N. Van Wassenhove. 2023. Managerial flexibility, capacity investment, and inventory levels. *Production and Operations Management* **32**(12) 3890-3907.

Atz, U., T. Van Holt, Z. Z. Liu, C. C. Bruno. 2023. Does Sustainability Generate Better Financial Performance? Review, Meta-Analysis, and Propositions. *Journal of Sustainable Finance & Investment* **13**(1): 802–825.

Awaysheh, A., R. A. Heron, T. Perry, J. I. Wilson. 2020. On the relation between corporate social responsibility and financial performance. *Strategic Management Journal* **41**(6): 965–987.

Badawi, A. B., F. Partnoy. 2022, September 16. Social Good and Litigation Risk. *Harvard Business Law Review.* **12** (315).

Bai, M., V. Astvansh. 2025. How and Why does a Business-to-Business Firm's Corporate Social Responsibility Disclosure Impact its Dependence on its Major Customers and Major Suppliers? *Production and Operations Management* **34**(1): 60–78.

Bayer, E., K. R. Tuli, B. Skiera. 2017. Do Disclosures of Customer Metrics Lower Investors' and Analysts' Uncertainty but Hurt Firm Performance? *Journal of Marketing Research* **54**(2): 239–259.

Bendoly E., A. Bharadwaj, S. Bharadwaj 2012. Complementary Drivers of New Product Development Performance: Cross-Functional Coordination, Information System Capability, and Intelligence Quality. *Production and Operations Management* **21**(4): 653-667.

Bhattacharya, C. B., S. Sen. 2003. Consumer–Company Identification: A Framework for Understanding Consumers' Relationships with Companies. *Journal of Marketing* **67**(2): 76–88.

Bhojraj, S., P. Sengupta. 2003. Effect of Corporate Governance on Bond Ratings and Yields: The Role of Institutional Investors and Outside Directors. *The Journal of Business* **76**(3): 455–475.

Boone, A. L., J. T. White. 2015. The Effect of Institutional Ownership on Firm Transparency and Information Production. *Journal of Financial Economics* **117**(3): 508–533.

Bramoullé, Y., H. Djebbari, B. Fortin. 2009. Identification of peer effects through social networks. *Journal of Econometrics* **150**(1): 41–55.

Breen, R. 1996. *Regression Models: Censored, Sample Selected, Or Truncated Data*. SAGE.

Brockman, P., M. Subasi, C. Uzmanoglu. 2017. Investor Conferences, Firm Visibility, and Stock Liquidity. *Financial Review* **52**(4): 661–699.

Bushee, B. J. 2001. Do Institutional Investors Prefer Near-Term Earnings over Long-Run Value? *Contemporary Accounting Research* **18**(2): 207–246.

Bushee, B. J., C. F. Noe. 2000. Corporate Disclosure Practices, Institutional Investors, and Stock Return Volatility. *Journal of Accounting Research* **38**: 171–202.

Carhart, M. M. 1997. On Persistence in Mutual Fund Performance. *The Journal of Finance* **52**(1): 57–82.

Chaudhuri, A., M. B. Holbrook. 2001. The Chain of Effects from Brand Trust and Brand Affect to Brand Performance: The Role of Brand Loyalty. *Journal of Marketing* **65**(2): 81–93.

Chernev, A., S. Blair. 2015. Doing Well by Doing Good: The Benevolent Halo of Corporate Social Responsibility. *Journal of Consumer Research* **41**(6): 1412–1425.

Chung, K. H., H. Zhang. 2011. Corporate Governance and Institutional Ownership. *Journal of Financial and Quantitative Analysis* **46**(1): 247–273.

Cillo, P., D. A. Griffith, G. Rubera. 2018. The New Product Portfolio Innovativeness–Stock Returns Relationship: The Role of Large Individual Investors' Culture. *Journal of Marketing* **82**(6): 49–70.

Colicev, A., A. Malshe, K. Pauwels, P. O'Connor. 2018. Improving Consumer Mindset Metrics and Shareholder Value through Social Media: The Different Roles of Owned and Earned Media. *Journal of Marketing* **82**(1): 37–56.

Donaldson, T., L. E. Preston. 1995. The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications. *The Academy of Management Review* **20**(1): 65.

Drumwright, M. E. 1996. Company Advertising with a Social Dimension: The Role of Noneconomic Criteria. *Journal of Marketing* **60**(4): 71–87.

Edeling, A., S. Srinivasan, D. M. Hanssens. 2021. The marketing–finance interface: A new integrative review of metrics, methods, and findings and an agenda for future research. *International Journal of Research in Marketing* **38**(4): 857–876.

Ellen, P. S., D. J. Webb, L. A. Mohr. 2006. Building corporate associations: Consumer attributions for corporate socially responsible programs. *Journal of the Academy of Marketing Science*, **34** (2), 147–57.

Factset TruValue Labs. 2021. Content Methodology: TruValue SASB Codified Edition.

Fairchild, A., O. Hawn, R. V. Aguilera, A. Colicev, Y. Bart. 2023, May 24. Gender Inequality, Social Movement, and Company Actions: How Do Wall Street and Main Street React?. working paper, University of North Carolina at Chapel Hill.

Ferreira, M. A., P. A. Laux. 2007. Corporate Governance, Idiosyncratic Risk, and Information Flow. *The Journal of Finance* **62**(2): 951–989.

Ferreira, M. A., P. Matos. 2008. The colors of investors' money: The role of institutional investors around the world. *Journal of Financial Economics* **88**(3): 499–533.

Freeman, R. E. 1984. *Strategic management: a stakeholder approach*. Pitman.

Garcia-Castro, R., M. A. Ariño, M. A. Canela. 2011. Over the Long-Run? Short-Run Impact and Long-Run Consequences of Stakeholder Management. *Business & Society* **50**(3): 428–455.

Germann, F., P. Ebbes, R. Grewal. 2015. The Chief Marketing Officer Matters! *Journal of Marketing* **79**(3): 1–22.

Giese, G. 2017. Has ESG Affected Stock Performance? (accessed January 15, 2024), https://www.msci.com/www/blog-posts/has-esg-affected-stock/0794561659.

Gorley, A. 2022. What Is ESG and Why It's Important for Risk Management (accessed February 22, 2023), https://www.sustainalytics.com/esg-research/resource/corporate-esg-blog/what-is-esg-why-important-risk-management.

Goyal, A., P. Santa-Clara. 2003. Idiosyncratic Risk Matters! *The Journal of Finance* **58**(3): 975–1007.

Grewal, R., R. Dharwadkar. 2002. The Role of the Institutional Environment in Marketing Channels. *Journal of Marketing* **66**(3): 82–97.

Hajric, V., E. Graffeo. 2021. Retail Traders Slide Back Below 20% of Market's Total Volume. Bloomberg (November 17), https://www.bloomberg.com/news/articles/2021-11-17/retail-traders-retreat-as-choppy-markets-challenge-easy-profits.

Han, K., V. Mittal, Y. Zhang. 2017. Relative Strategic Emphasis and Firm-Idiosyncratic Risk: The Moderating Role of Relative Performance and Demand Instability. *Journal of Marketing* **81**(4): 25–44.

Henisz, W. J., J. McGlinch. 2019. ESG, Material Credit Events, and Credit Risk. *Journal of Applied Corporate Finance* **31**(2): 105–117.

Homburg, C., M. Stierl, T. Bornemann. 2013. Corporate Social Responsibility in Business-to-Business Markets: How Organizational Customers Account for Supplier Corporate Social Responsibility Engagement. *Journal of Marketing* **77**(6): 54–72.

Hope, B. 2022, Top 10: Global companies with best social impact initiatives. (accessed January 15, 2024), https://sustainabilitymag.com/top10/top-10-global-companies-with-best-social-impact-initiatives-esg.

Huberman, G. 2001. Familiarity Breeds Investment. *Review of Financial Studies*, **14** (3), 659–80.

Izcan, D., E. Bektas. 2022. The Relationship between ESG Scores and Firm-Specific Risk of Eurozone Banks. *Sustainability* **14**(14): 8619.

Jacobs, B. W., R. Kraude, S. Narayanan. 2016. Operational Productivity, Corporate Social Performance, Financial Performance, and Risk in Manufacturing Firms. *Production and Operations Management* **25**(12): 2065–2085.

Jacobs, B. W., V. R. Singhal. 2020. Shareholder Value Effects of the Volkswagen Emissions Scandal on the Automotive Ecosystem. *Production and Operations Management* **29**(10): 2230–2251.

Jindal, N. 2020. The Impact of Advertising and R&D on Bankruptcy Survival: A Double-Edged Sword. *Journal of Marketing* **84**(5): 22–40.

Jindal, N., L. McAlister. 2015. The Impacts of Advertising Assets and R&D Assets on Reducing Bankruptcy Risk. *Marketing Science* **34**(4): 555–572.

Keller, K. L. 1993. Conceptualizing, Measuring, and Managing Customer-Based Brand Equity. *Journal of Marketing* **57**(1): 1–22.

Keller, K. L. 2003. *Strategic Brand Management: Building, Measuring, and Managing Brand Equity*. Prentice Hall.

Kothari, S. P. 2001. Capital markets research in accounting. *Journal of Accounting and Economics* **31**(1): 105–231.

Kraft, T., L. Valdés, Y. Zheng. 2022. Consumer trust in social responsibility communications: The role of supply chain visibility. *Production and Operations Management* **31**(11): 4113–4130.

Kurt, D., J. Hulland. 2013. Aggressive Marketing Strategy following Equity Offerings and Firm Value: The Role of Relative Strategic Flexibility. *Journal of Marketing* **77**(5): 57–74.

Lamin, A., S. Zaheer. 2012. Wall Street vs. Main Street: Firm Strategies for Defending Legitimacy and Their Impact on Different Stakeholders. *Organization Science* **23**(1): 47–66.

Larcker, D. F., E. M. Watts. 2020. Where's the greenium? *Journal of Accounting and Economics* **69**(2–3): 101312.

Li, G., N. Li, S. P. Sethi. 2021. Does CSR Reduce Idiosyncratic Risk? Roles of Operational Efficiency and AI Innovation. *Production and Operations Management* **30**(7): 2027–2045.

Li, J., D. (Andrew) Wu. 2020. Do Corporate Social Responsibility Engagements Lead to Real Environmental, Social, and Governance Impact? *Management Science* **66**(6): 2564–2588.

Lichtenstein, D. R., M. E. Drumwright, B. M. Braig. 2004. The Effect of Corporate Social Responsibility on Customer Donations to Corporate-Supported Nonprofits. *Journal of Marketing* **68**(4): 16–32.

Luo, X., C. B. Bhattacharya. 2006. Corporate Social Responsibility, Customer Satisfaction, and Market Value. *Journal of Marketing* **70**(4): 1–18.

Luo, X., C. B. Bhattacharya. 2009. The Debate over Doing Good: Corporate Social Performance, Strategic Marketing Levers, and Firm-Idiosyncratic Risk. *Journal of Marketing* **73**(6): 198–213.

Luo, X., R. Zhang, W. Zhang, J. Aspara. 2014. Do institutional investors pay attention to customer satisfaction and why? *Journal of the Academy of Marketing Scemce.* **42**(2): 119–136.

Mallapragada, G., S. R. Chandukala, Q. Liu. 2016. Exploring the Effects of "What" (Product) and "Where" (Website) Characteristics on Online Shopping Behavior. *Journal of Marketing* **80**(2): 21–38.

Malshe, A., M. K. Agarwal. 2015. From Finance to Marketing: The Impact of Financial Leverage on Customer Satisfaction. *Journal of Marketing* **79**(5): 21–38.

Malshe, A., A. Colicev, V. Mittal. 2020. How Main Street Drives Wall Street: Customer (Dis)satisfaction, Short Sellers, and Abnormal Returns. *Journal of Marketing Research* **57**(6): 1055–1075.

Margolis, J. D., H. A. Elfenbein, J. P. Walsh. 2009, March 1. Does it Pay to Be Good And Does it Matter? A Meta-Analysis of the Relationship between Corporate Social and Financial Performance. *working paper, Harvard University.*

Martin, R. 2009. The Age of Customer Capitalism. *Harvard Business Review*, **88** (1), 58–65.

Mitchell, R. K., B. R. Agle, D. J. Wood. 1997. Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts. *The Academy of Management Review* **22**(4): 853–886.

Modi, S. B., D. E. Cantor. 2021. How Coopetition Influences Environmental Performance: Role of Financial Slack, Leverage, and Leanness. *Production and Operations Management* **30**(7): 2046–2068.

Moon, S., K. R. Tuli, A. Mukherjee. 2023. Does Disclosure of Advertising Spending Help Investors and Analysts? *Journal of Marketing* **87**(3): 359–382.

Morgenstern, R. D., W. A. Pizer, J.-S. Shih. 2001. The Cost of Environmental Protection. *Review of Economics and Statistics* **83**(4): 732–738.

Naidu, R., R. Kerber. 2022. Unilever under pressure to show sustainability focus is good for business. | Reuters (February 9), https://www.reuters.com/business/retail-consumer/unilever-under-pressure-show-sustainability-focus-is-good-business-2022-02-09/.

Nofsinger, J. R., J. Sulaeman, A. Varma. 2019. Institutional investors and corporate social responsibility. *Journal of Corporate Finance* **58**: 700–725.

Opler, T., L. Pinkowitz, R. Stulz, R. Williamson. 1999. The determinants and implications of corporate cash holdings. *Journal of Financial Economics* **52**(1): 3–46.

Pérez, L., V. Hunt, H. Samandari, R. Nuttall, K. Biniek. 2022. Does ESG really matter—and why? *The McKinsey Quarterly* (August 10), https://www.mckinsey.com/capabilities/sustainability/our-insights/does-esg-really-matter-and-why.

Peshawaria, R. 2022. ESG: Will G Save Us From E and S Challenges? *Forbes* (October 17), https://www.forbes.com/sites/rajeevpeshawaria/2022/10/17/esg-will-g-save-us-from-e-and-s-challenges/.

Petrin, A., K. Train. 2010. A Control Function Approach to Endogeneity in Consumer Choice Models. *Journal of Marketing Research* **47**(1): 3–13.

Preacher, K. J., A. F. Hayes. 2004. SPSS and SAS Procedures for Estimating Indirect Effects in Simple Mediation Models. *Behavior Research Methods, Instruments, & Computers*, 36 (4), 717–31.

Pu, J., H. Shan, T. Yuan. 2024. Corporate Use of Social Media After ESG Incidents. *Production and Operations Management* 1–19.

PwC 2021. Consumer Intelligence Series Survey on ESG. (accessed March 6, 2023), https://www.pwc.com/us/en/services/consulting/library/consumer-intelligence-series/consumer-and-employee-esg-expectations.html.

Rajavi, K., S. Golara, S. Modaresi. 2024. Impact of Inventory Levels and Product Variety on Consumers' Perceptions of Brands. *Production and Operations Management* **33**(9): 1855–1874.

Rego, L. L., M. T. Billett, N. A. Morgan. 2009. Consumer-Based Brand Equity and Firm Risk. *Journal of Marketing* **73**(6): 47–60.

Rogers, C. 2019. Why Managing Risk Is Now Essential to Marketing. *Marketing Week* (May 14), https://www.marketingweek.com/the-rise-of-risk-management-in-marketing/.

Roodman, D. 2011. Fitting Fully Observed Recursive Mixed-process Models with cmp. *The Stata Journal* **11**(2): 159–206.

Rubera, G., A. H. Kirca. 2017. You gotta serve somebody: the effects of firm innovation on customer satisfaction and firm value. *Journal of the Academy of Marketing Science* **45**(5): 741–761.

S&P Global. 2019. Understanding the 'E' in ESG. (accessed February 21, 2023), https://www.spglobal.com/en/research-insights/articles/understanding-the-e-in-esg.

S&P Global. 2020. What Is the 'S' in ESG? (accessed February 21, 2023), https://www.spglobal.com/en/research-insights/articles/what-is-the-s-in-esg.

SASB. 2023. Materiality Finder. https://sasb.org/standards/materiality-finder/.

Sen, S., C. B. Bhattacharya. 2001. Does Doing Good Always Lead to Doing Better? Consumer Reactions to Corporate Social Responsibility. *Journal of Marketing Research* **38**(2): 225–243.

Serafeim, G., A. Yoon. 2023. Stock price reactions to ESG news: the role of ESG ratings and disagreement. *Review of Accounting Studies* **28**(3): 1500–1530.

Shi, H., R. Grewal, H. Sridhar. 2021. Organizational Herding in Advertising Spending Disclosures: Evidence and Mechanisms. *Journal of Marketing Research* **58**(3): 515–538.

Shleifer, A., R. W. Vishny. 1986. Large Shareholders and Corporate Control. *Journal of Political Economy* **94**(3): 461–488.

Sodhi, M. S. 2015. Conceptualizing Social Responsibility in Operations Via Stakeholder Resource-Based View. *Production and Operations Management* **24**(9): 1375–1389.

Stäbler, S., M. Fischer. 2020. When Does Corporate Social Irresponsibility Become News? Evidence from More Than 1,000 Brand Transgressions Across Five Countries. *Journal of Marketing* **84**(3): 46–67.

Statista. 2023. Leading ESG Characteristics for Investors. https://www.statista.com/statistics/1204036/top-esg-risks-and-opportunities-for-investors-worldwide/.

Strine, L. E., J. L. Brooke, K. M. Diamond, Derrick L. Parker Jr. 2022, November 18. It's Time to Focus on the "G" in ESG. *Harvard Business Review* (November 18), https://hbr.org/2022/11/its-time-to-focus-on-the-g-in-esg.

Tari, A., R. Trudel. 2024. Affording Disposal Control: The Effect of Circular Take-Back Programs on Psychological Ownership and Valuation. *Journal of Marketing*, **88** (3), 110–26.

Temple-West, P., G. Tett. 2022, March 14. Is it time to separate 'E' from 'S' and 'G? *Financial Times* (March 14), https://www.ft.com/content/b8df3190-e91e-4138-be00-142b5603eb92.

Thomson Reuters. 2021. ESG Trends in Risk Management.
https://legal.thomsonreuters.com/en/insights/articles/esg-trends-in-risk-management.

Torelli, C. J., A. B. Monga, A. M. Kaikati. 2012. Doing Poorly by Doing Good: Corporate Social Responsibility and Brand Concepts. *Journal of Consumer Research* **38**(5): 948–963.

Tuli, Kapil R. and Sundar G. Bharadwaj (2009), "Customer Satisfaction and Stock Returns Risk," *Journal of Marketing*, 73 (6), 184–97.

Wang, H., M. Jia, Z. Zhang. 2021. Good Deeds Done in Silence: Stakeholder Management and Quiet Giving by Chinese Firms. *Organization Science* **32**(3): 649–674.

Washington, P., A. Jones 2023. ESG Backlash Is Real and Growing. What to Know. Barron's (August 22), https://www.barrons.com/articles/esg-backlash-is-real-and-growing-what-to-know-264ec4f6.

Welch, K., A. Yoon. 2022. Do high-ability managers choose ESG projects that create shareholder value? Evidence from employee opinions. *Review of Accounting Studies*, **8** (4), 2448–75.

Wills, E., 2023. Stop Stock Buybacks! Dollars & Sense (May/June), https://dollarsandsense.org/archives/2023/0523wills.html.

Wolfe, R. A., D. S. Putler. 2002. How Tight Are the Ties that Bind Stakeholder Groups? *Organization Science* **13**(1): 64–80.

Wooldridge, J. M. 2010. Econometric Analysis of Cross Section and Panel Data (2nd ed). *The MIT Press*

YouGov 2023. Global Market Analysis – Importance of ESG in Consumer Purchase Decisions. (February 10), https://business.yougov.com/content/7678-global-market-analysis-esg-importance-consumer-purchase-decisions.

E-Companion to
"How ESG Reduces Idiosyncratic Risk: The Role of Consumers and Institutional Investors"

Appendix A. Research of ESG and Idiosyncratic Risk

We compared our work with prior studies of ESG on idiosyncratic risk in Table A1. In the existing research, ESG performance is predominantly treated as a composite measure, while only a few studies examine the E, S and G performance separately. At the aggregate ESG level, studies generally find a negative relationship between ESG and idiosyncratic risk. At the disaggregate level, limited studies suggest mixed results on the individual ESG factors and idiosyncratic risk.

For example, while Bouslah et al. (2013) find that only employee and human rights-related performances (part of the S performance) lower total and idiosyncratic risks, Sassen et al. (2016) suggest a negative impact of E and S performance and a non-significant impact of G performance on idiosyncratic risk. Likewise, Benlemlih et al. (2018) suggest a negative relationship between E and S performances and idiosyncratic risk, Izcan and Bektas (2022) show the negative impact of environmental and governance performances and non-significant impact of social performance on idiosyncratic risk, while Korinth and Lueg (2022) find non-significant impact of environmental and governance performances on idiosyncratic risk and significant nonlinear relationship between social performance and idiosyncratic risk. It is worth noting these studies use ESG datasets that combine external ESG-related information with companies' self-reported data. Additionally, none of these studies examine the underlying mechanism through which ESG impacts idiosyncratic risk.

In turn, we tested (1) the role of E, S, and G performance separately and (2) the underlying mechanism through which E, S, and G performance is associated with idiosyncratic risk using TruValue Labs ESG data, which adheres to SASB standards and excludes companies' self-reported information.

Table A1. Research on ESG/CSR and idiosyncratic risk

Study	Time frame	ESG measures	Method	Endogeneity Correction	Mechanism	Conclusion
Bansal and Clelland (2004)	1990-1994	The E performance	Pooled OLS regression analysis	No	No	Corporate environmental legitimacy reduces unsystematic risk.
Lee and Faff (2009)	1998-2002	Aggregate-level ESG	Grouped OLS regression analysis	No	No	Leading (lagging) corporate social performance (CSP) firms exhibit significantly lower (higher) idiosyncratic risk.
Luo and Bhattacharya (2009)	2002-2003	Aggregate-level ESG	Random-effects panel regression model	No	No	Higher corporate social performance (CSP) lowers idiosyncratic risk. A simultaneous pursuit for CSP, advertising, and R&D is harmful with increased firm-idiosyncratic risk.
Bauer et al. (2009)	2001-2002	The S performance (i.e., employee)	2SLS	Yes	No	Firms with stronger employee relations enjoy a statistically and economically lower cost of debt financing, higher credit ratings, and lower firm-specific risk.
Mishra and Modi (2013)	2000-2009	Aggregate-level ESG	3SLS	Yes	No	Positive CSR reduces risk.
Bouslah et al. (2013)	1991-2007	Disaggregate-level: Community, Diversity, Employee relations, Environment, Human rights, Product, Governance	Pooled panel regression with industry and year fixed effects	No	No	Diversity and Governance strengths are significantly and positively related to total risk and idiosyncratic risk. For S&P500 firms, Community strengths are significantly and negatively related to a firm's idiosyncratic risk, whereas Diversity strengths are significantly and positively related only to a firm's idiosyncratic risk.
Sassen et al. (2016)	2002-2014	Disaggregate-level: E, S, and G	Fixed-effects panel regression model	Yes	No	E and S negatively impact idiosyncratic risk, while G does not have a significant impact on idiosyncratic risk.
Mishra and Modi (2016)	2000-2009	Aggregate-level ESG and disaggregate-level: environment, product, diversity, governance, employee, and community	Pooled panel regression with industry and year fixed effects	Yes	No	The effects of overall CSR efforts on idiosyncratic risk are not significant on their own but only become so in the presence of marketing capability.
Benlemlih et al. (2018)	2005-2013	E and S performance and disclosure	Random-effects panel regression model	Yes	No	A negative and significant association between E and S disclosures/scores and idiosyncratic risk.
Li et al. (2021)	2010-2017	Aggregate-level ESG	Fixed-effects panel regression model	Yes	No	The relationship between ESG and idiosyncratic risk is U-shaped.
He et al. (2022)	2006-2019	Aggregate-level ESG disclosure	Fixed-effects panel regression model	No	No	Firms with ESG information disclosure have lower idiosyncratic risk than their counterparts.

Reber et al. (2022)	2002-2018	Aggregate-level ESG performance and disclosure	Pooled OLS regression analysis	No	No	Voluntary ESG disclosure reduces idiosyncratic risk. Firms with higher ESG scores have lower idiosyncratic risk.
Izcan and Bektas (2022)	2002-2019	Aggregate-level ESG and disaggregate-level: E, S, and G	Grouped OLS regression analysis	No	No	ESG has a negative impact on idiosyncratic risk overall. The G and E dimensions have a negative impact on banks with medium- to high-risk levels. No significant relationship between S and the idiosyncratic risk.
Korinth and Lueg (2022)	2012-2019	Aggregate-level ESG and disaggregate-level: E, S, and G	Fixed-effects panel regression model	No	No	The impacts of E and G on idiosyncratic risk are significant. There is a significant nonlinear relationship between S and idiosyncratic risk: S initially decreases idiosyncratic risk, while overinvestment in it increases idiosyncratic risk.
This study	2012-2020	Disaggregate-level: E, S, and G performances	Fixed-effects panel regression model	Yes	Yes	E performance has a positive association, and G performance has a negative association with CBBE. E and S performances have a negative association, and G performance has a positive association with IIO. CBBE and IIO mediate the associations of ESG and idiosyncratic risk.

Appendix B. Definitions of ESG Categories from TruValue Labs

Factset TruValue Labs (TVL) follows an "outside-in" perspective on obtaining the ESG performance for each firm and does not rely on the firms' disclosures (Hughes et al. 2021). We summarized the major characteristics of TVL in Table B1, and we articulated the definitions of the 26 ESG categories from TVL below.

Table B1. Characteristics of TVL

	TVL
Ability to separate ESG into multiple dimensions	Provides E, S, and G performances separately
Nature of information	Captures more than 100,000 online sources, including news articles, analyst reports, trade journals and industry publications, watchdog groups, and social media but excluding company disclosures (Outside-in)
ESG definitions	Defined by SASB
Rating updating frequency	Daily

Environmental

1. Air quality

   The category addresses the management of air quality impacts resulting from stationary (e.g., factories, power plants) and mobile sources (e.g., trucks, delivery vehicles, planes) as well as industrial emissions. Relevant airborne pollutants include but are not limited to, oxides of nitrogen (NOx), oxides of sulfur (SOx), volatile organic compounds (VOCs), heavy metals, particulate matter, and chlorofluorocarbons. The category does not include GHG emissions, which are addressed in a separate category.

2. Ecological Impacts

   The category addresses the management of the company's impacts on ecosystems and biodiversity through activities including, but not limited to, land use for exploration, natural resource extraction, and cultivation, as well as project development, construction, and siting. The impacts include, but are not limited to, biodiversity loss, habitat destruction, and deforestation at all stages – planning, land acquisition, permitting, development, operations, and site remediation. The category does not cover the impacts of climate change on ecosystems and biodiversity.

3. Energy Management

The category addresses environmental impacts associated with energy consumption. It addresses the company's management of energy in manufacturing and/or for the provision of products and services derived from utility providers (grid energy) not owned or controlled by the company. More specifically, it includes management of energy efficiency and intensity, energy mix, and grid reliance. Upstream (e.g., suppliers) and downstream (e.g., product use) energy use is not included in the scope.

4. GHG Emissions

The category addresses direct (Scope 1) greenhouse gas (GHG) emissions that a company generates through its operations. This includes GHG emissions from stationary (e.g., factories, power plants) and mobile sources (e.g., trucks, delivery vehicles, planes), whether a result of combustion of fuel or non-combusted direct releases during activities such as natural resource extraction, power generation, land use, or biogenic processes. The category further includes management of regulatory risks, environmental compliance, and reputational risks and opportunities as they relate to direct GHG emissions. The seven GHGs covered under the Kyoto Protocol are included within the category— carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).

5. Waste & Hazardous Materials Management

The category addresses a company's water use, water consumption, wastewater generation, and other impacts of operations on water resources, which may be influenced by regional differences in the availability and quality of and competition for water resources. More specifically, it addresses management strategies including, but not limited to, water efficiency, intensity, and recycling. Lastly, the category also addresses the management of wastewater treatment and discharge, including groundwater and aquifer pollution.

6. Water & Wastewater Management

The category addresses environmental issues associated with hazardous and non-hazardous waste generated by companies. It addresses a company's management of solid wastes in manufacturing, agriculture, and other industrial processes. It covers treatment, handling, storage, disposal, and regulatory compliance. The category does not cover emissions to air or wastewater, nor does it cover waste from end-of-life products, which are addressed in separate categories.

Social

1. Access & Affordability

   The category addresses a company's ability to ensure broad access to its products and services, specifically in the context of underserved markets and/or population groups. It includes the management of issues related to universal needs, such as the accessibility and affordability of health care, financial services, utilities, education, and telecommunications.

2. Customer Privacy

   The category addresses the management of risks related to the use of personally identifiable information (PII) and other customer or user data for secondary purposes, including but not limited to marketing through affiliates and non-affiliates. The scope of the category includes social issues that may arise from a company's approach to collecting data, obtaining consent (e.g., opt-in policies), managing user and customer expectations regarding how their data is used, and managing evolving regulations. It excludes social issues arising from cybersecurity risks, which are covered in a separate category.

3. Customer Welfare

   The category addresses customer welfare concerns over issues including, but not limited to, health and nutrition of foods and beverages, antibiotic use in animal production, and management of controlled substances. The category addresses the company's ability to provide consumers with manufactured products and services that are aligned with societal expectations. It does not include issues directly related to quality and safety malfunctions of manufactured products and services but instead addresses qualities inherent to the design and delivery of products and services where customer welfare may be in question. The scope of the category also captures companies' ability to prevent counterfeit products.

4. Data Security

   The category addresses the management of risks related to the collection, retention, and use of sensitive, confidential, and/or proprietary customer or user data. It includes social issues that may arise from incidents such as data breaches in which personally identifiable information (PII) and other user or customer data may be exposed. It addresses a company's strategy, policies, and practices related to IT infrastructure, staff training, record keeping, cooperation with law enforcement, and other mechanisms used to ensure the security of customer or user data.

5. Human Rights & Community Relations

   The category addresses management of the relationship between businesses and the communities in which they operate, including, but not limited to, management of direct and indirect impacts on core human rights and the treatment of indigenous peoples. More specifically, such management may cover socioeconomic community impacts, community engagement, environmental justice, cultivation of local workforces, impact on local businesses, license to operate, and environmental/social impact assessments. The category does not include environmental impacts such as air pollution or waste, which, although they may impact the health and safety of members of local communities, are addressed in separate categories.

6. Product Quality & Safety

   The category addresses issues involving unintended characteristics of products sold or services provided that may create health or safety risks to end-users. It addresses a company's ability to offer manufactured products and/or services that meet customer expectations with respect to their health and safety characteristics. It includes, but is not limited to, issues involving liability, management of recalls and market withdrawals, product testing, and chemicals/content/ ingredient management in products.

7. Selling Practice & Product Labelling

   The category addresses social issues that may arise from a failure to manage the transparency, accuracy, and comprehensibility of marketing statements, advertising, and labeling of products and services. It includes but is not limited to advertising standards and regulations, ethical and responsible marketing practices, misleading or deceptive labeling, and discriminatory or predatory selling and lending practices. This may include deceptive or aggressive selling practices in which incentive structures for employees could encourage the sale of products or services that are not in the best interest of customers or clients.

8. Employee Engagement, Diversity, and Inclusion

   The category addresses a company's ability to ensure that its culture and hiring and promotion practices embrace the building of a diverse and inclusive workforce that reflects the makeup of local talent pools and its customer base. It addresses the issues of discriminatory practices on the basis of race, gender, ethnicity, religion, sexual orientation, and other factors.

9. Employee Health and Safety

The category addresses a company's ability to create and maintain a safe and healthy workplace environment that is free of injuries, fatalities, and illness (both chronic and acute). It is traditionally accomplished through implementing safety management plans, developing training requirements for employees and contractors, and conducting regular audits of their own practices as well as those of their subcontractors. The category further captures how companies ensure the physical and mental health of the workforce through technology, training, corporate culture, regulatory compliance, monitoring and testing, and personal protective equipment.

10. Labor practices

The category addresses the company's ability to uphold commonly accepted labor standards in the workplace, including compliance with labor laws and internationally accepted norms and standards. This includes, but is not limited to, ensuring basic human rights related to child labor, forced or bonded labor, exploitative labor, fair wages and overtime pay, and other basic workers' rights. It also includes minimum wage policies and the provision of benefits, which may influence how a workforce is attracted, retained, and motivated. The category further addresses a company's relationship with organized labor and freedom of association.

Governance

1. Business Model Resilience

The category addresses an industry's capacity to manage risks and opportunities associated with incorporating social, environmental, and political transitions into long-term business model planning. This includes responsiveness to the transition to a low-carbon and climate-constrained economy, as well as growth and creation of new markets among unserved and underserved socioeconomic populations. The category highlights industries in which evolving environmental and social realities may challenge companies to fundamentally adapt or may put their business models at risk.

2. Material Sourcing & Efficiency

The category addresses issues related to the resilience of materials supply chains to impacts of climate change and other external environmental and social factors. It captures the impacts of such external factors on the operational activity of suppliers, which can further affect the

availability and pricing of key resources. It addresses a company's ability to manage these risks through product design, manufacturing, and end-of-life management, such as by using recycled and renewable materials, reducing the use of key materials (dematerialization), maximizing resource efficiency in manufacturing, and making R&D investments in substitute materials. Additionally, companies can manage these issues by screening, selection, monitoring, and engagement with suppliers to ensure their resilience to external risks. It does not address issues associated with environmental and social externalities created by the operational activity of individual suppliers, which is covered in a separate category.

3. Physical Impacts of Climate Change

The category addresses the company's ability to manage risks and opportunities associated with direct exposure of its owned or controlled assets and operations to actual or potential physical impacts of climate change. It captures environmental and social issues that may arise from operational disruptions due to the physical impacts of climate change. It further captures socioeconomic issues resulting from companies failing to incorporate climate change consideration in products and services sold, such as insurance policies and mortgages. The category relates to the company's ability to adapt to increased frequency and severity of extreme weather, shifting climate, sea level risk, and other expected physical impacts of climate change. Management may involve enhancing the resiliency of physical assets and/or surrounding infrastructure as well as incorporating climate change-related considerations into key business activities (e.g., mortgage and insurance underwriting, planning, and development of real estate projects).

4. Product Design and Lifecycle Management

The category addresses the incorporation of environmental, social, and governance (ESG) considerations in the characteristics of products and services provided or sold by the company. It includes but is not limited to, managing the lifecycle impacts of products and services, such as those related to packaging, distribution, use-phase resource intensity, and other environmental and social externalities that may occur during their use-phase or at the end-of-life. The category captures a company's ability to address customer and societal demand for more sustainable products and services as well as to meet evolving environmental and social regulations. It does not address direct environmental or social impacts of the company's operations, nor does it address health and safety risks to consumers from product use, which are covered in other categories.

5. Supply Chain Management

The category addresses management of environmental, social, and governance (ESG) risks within a company's supply chain. It addresses issues associated with environmental and social externalities created by suppliers through their operational activities. Such issues include, but are not limited to, environmental responsibility, human rights, labor practices, and ethics and corruption. Management may involve screening, selection, monitoring, and engagement with suppliers on their environmental and social impacts. The category does not address the impacts of external factors – such as climate change and other environmental and social factors – on suppliers' operations and/or on the availability and pricing of key resources, which is covered in a separate category.

6. Critical Incident Risk Management

The category addresses the company's use of management systems and scenario planning to identify, understand, and prevent or minimize the occurrence of low-probability, high-impact accidents and emergencies with significant potential environmental and social externalities. It relates to the culture of safety at a company, its relevant safety management systems and technological controls, the potential human, environmental, and social implications of such events occurring, and the long-term effects to an organization, its workers, and society should these events occur.

7. Competitive Behavior

The category covers social issues associated with the existence of monopolies, which may include, but are not limited to, excessive prices, poor quality of service, and inefficiencies. It addresses a company's management of legal and social expectations around monopolistic and anti-competitive practices, including issues related to bargaining power, collusion, price fixing or manipulation, and protection of patents and intellectual property (IP).

8. Business Ethics

The category addresses the company's approach to managing risks and opportunities surrounding ethical conduct of business, including fraud, corruption, bribery and facilitation payments, fiduciary responsibilities, and other behavior that may have an ethical component. This includes sensitivity to business norms and standards as they shift over time, jurisdiction, and culture. It addresses the company's ability to provide services that satisfy the highest professional and

ethical standards of the industry, which means avoiding conflicts of interest, misrepresentation, bias, and negligence through training employees adequately and implementing policies and procedures to ensure employees provide services free from bias and error.

9. Management of Legal & Regulatory Environment

The category addresses a company's approach to engaging with regulators in cases where conflicting corporate and public interests may have the potential for long-term adverse direct or indirect environmental and social impacts. The category addresses a company's level of reliance upon regulatory policy or monetary incentives (such as subsidies and taxes), actions to influence industry policy (such as through lobbying), overall reliance on a favorable regulatory environment for business competitiveness, and ability to comply with relevant regulations. It may relate to the alignment of management and investor views of regulatory engagement and compliance at large.

10. Systematic Risk Management

The category addresses the company's contributions to or management of systemic risks resulting from large-scale weakening or collapse of systems upon which the economy and society depend. This includes financial systems, natural resource systems, and technological systems. It addresses the mechanisms a company has in place to reduce its contributions to systemic risks and to improve safeguards that may mitigate the impacts of systemic failure. For financial institutions, the category also captures the company's ability to absorb shocks arising from financial and economic stress and meet stricter regulatory requirements related to the complexity and interconnectedness of companies in the industry.

Appendix C. ESG and CSR

Despite the strong interest among academicians, practitioners, and regulators, the ESG framework lacks a universally accepted definition among various stakeholders. The academic literature has often treated ESG and other related frameworks, such as corporate social responsibility (CSR), synonymously (Gillan et al. 2021). In contrast, practitioners and regulators analyze ESG investing and reporting by focusing on each letter (E, S, G) in turn (Deloitte 2021)(SEC 2021). Finally, investors use ESG terminology primarily for the identification, assessment, and management of business risks and opportunities due to environmental, social, and governance issues. For example, the International Finance Corporation (IFC), a World Bank group, argues that "a better inclusion of environmental, social and corporate governance (ESG) factors in investment decisions will ultimately contribute to more stable and predictable markets, which is in the interest of all market actors" (IFC 2004).

The lack of consensus about what ESG entails is a growing concern among policymakers. A recent Congressional Research Service report on proposed ESG reporting rules by the Securities and Exchange Commission (SEC) concludes that "without a clear definition of what constitutes ESG, some of the adopted rules might be difficult to measure and enforce" (Gnanarajah and Shorter 2023).

We next discuss how ESG differs from CSR by focusing on four dimensions: objective, scope, focus, and communication with stakeholders. We summarize the differences in Table C1.

Objective. Beal (2014) comprehensively defines CSR as the moral and practical obligation of market participants to consider the effect of their actions on collective or system-level outcomes and to then regulate their behavior to contribute to bringing those outcomes into congruence with societal expectations. The overarching objective of CSR activities is for companies to become good corporate citizens by engaging in activities that are not guided by profit motives. A key aspect of CSR is that corporations are expected to fulfill stakeholders' expectations other than shareholders. As such, "doing good" is a succinct purpose of CSR. However, scholars have questioned the extent to which the purpose of CSR is aligned with the shareholder value maximization goal (Friedman 1970). Freeman and Velamuri (2006) assert that CSR *reinforces 'the separation thesis,' or the idea that we should separate 'business' from 'ethics or society*.' In contrast, ESG is rooted in the form of capitalism that relies on the nexus among multiple stakeholders. Accordingly, the objective of ESG is to "grow the pie" by taking a long-term view that benefits multiple stakeholders (Edmans 2021). For instance, good governance directly benefits the firm and several stakeholders, such as investors and employees, without necessarily doing good for the broader society. A fundamental assumption is that ESG factors can be detectable with

reputational outcomes and are reflected through the firm's policies directed to stakeholders (Jones 1995). Thus, ESG performance manifests the firm's initiatives to establish cooperative behavior with stakeholders, which should be reflected in performance outcomes. To gain legitimacy among regulators, policymakers, and financial market participants, firms engaging in ESG publicly commit to improving the relevant factors for primary stakeholders and periodically disclose the progress towards the committed improvements.

Scope. The scope of CSR includes all the stakeholders except shareholders. Scholars have argued that as CSR is incompatible with profit generation, companies should not always seek profit maximization (Kolstad 2007). Thus, the scope of CSR is any philanthropic activity that does not benefit the shareholders. ESG has a narrower scope involving doing business that creates stakeholder value by capturing opportunities and *managing risks* from environmental, social, and governance factors. Furthermore, the list of ESG categories from the Sustainability Accounting Standards Board (SASB) includes only 26 items. SASB also urges companies to select a smaller set of material ESG categories and focus on them.

Communication to stakeholders. As CSR is related to philanthropy, the essential component of CSR is the communication of these activities and the corporate social performance to the stakeholders. Such communication is often ad-hoc because there are no disclosure guidelines for CSR. Thus, companies communicate their CSR outcomes when initiatives fulfill their goals. On the other hand, ESG requires more strict and standardized reporting (IFRS 2023a, b), which contains both the ESG targets and achieved ESG metrics.

Table C1. Comparison of ESG and CSR

Dimensions	ESG	CSR
Objective	"Grow the pie" by taking a long-term view that benefits multiple stakeholders.	Altruistic, doing good, and becoming a responsible corporate citizen
Scope	Narrower: focuses exclusively on the environmental, social, and governance factors.	Broader: goes beyond ESG and may include factors such as human rights and charities.
Communication to Stakeholders	Structured: Detailed and standardized reporting on key targets	Unstructured: Ad-hoc based on outcomes of CSR initiatives

Appendix D. Details of Data Merging

We collected data from multiple sources. We acquired ESG performances from Factset Truvalue Labs (TVL) and kept all US publicly listed or delisted firms with ticker symbols.

We obtained customer-based brand equity (CBBE) from YouGov BrandIndex. Our access to the YouGov BrandIndex database encompasses a total of 1,887 brands. We manually identified corporate owners of brands by following a consistent procedure that combines the search of the brand name on Google and Wikipedia, reading brand history on websites, and checking other relevant sources (e.g., company reports). For each brand, we found the brand owner and possible change of ownership throughout our sample period. On manual inspection, the 1,887 brands from YouGov belong to 454 publicly traded corporate owners with GVKEY.

We obtained firms' advertising spending from Kantar Ad$pender, which has multiple advertising media channels for brands at monthly frequency. We aggregated Kantar advertising across brands and media types to the ultimate owner level.

We searched the entire database via Wharton Research Data Services to obtain the following data: institutional investor ownership (IIO) from Thomson/Refinitiv, financial variables from Compustat North America Fundamentals Quarterly, daily stock market data from the Center for Research in Security Prices (CRSP), and Fama-French factors data from Fama-French Portfolios and Factors. Additionally, we obtained data on "100 Best Companies to Work For" from the Fortune list (https://fortune.com/ranking/best-companies/) and news information from RavenPack News Analytics. We used R/R Studio to clean and merge the data and Stata 17 for empirical analyses.

Data Merging

We started with public firms with TVL ESG data available. Our sample (Compustat-TVL) has 176,316 firm-quarter observations of 5,427 firms.

Next, we aggregated YouGov daily data to a quarterly level and used GVKEY, year, and quarter to join the Compustat-TVL merged dataset with YouGov data. Since our access to YouGov spans from 2012 Q4 to 2020 Q3, we have 10,362 firm-quarter observations of 418 firms with variables available from YouGov. After that, we merged CRSP daily stock data and Fama-French factors to calculate

idiosyncratic risk and abnormal returns. We then used the Compustat-TVL-YouGov merged dataset to left join CRSP, risk and return data, and Thomson/Refinitiv using NCUSIP, year, and quarter.

We further combined the Compustat-TVL-YouGov-CRSP-risk and return-Thomson/Refinitiv merged dataset and Kantar data. We started with merging firms in Compustat and Kantar. Since there is no standard key between Compustat and Kantar, we used "fuzzy join" to match firm names, which created multiple pairs of matches for each firm. Two independent coders manually analyzed the matched names, and we kept the most appropriate matches with CIK numbers. We used CIK, year, and quarter to left join Compustat-TVL-YouGov-CRSP-risk and return-Thomson/Refinitiv merged dataset and Kantar. Finally, we left joined the dataset with Fortune and RavenPack using GVKEY, year, and quarter.

From the 10,362 firm-quarter observations of 418 firms, we removed observations with missing values for idiosyncratic risk and any of the control variables in our analyses. Our final dataset for analyses includes 10,248 firm-quarter observations of the 416 firms.

Appendix E. Details on the YouGov BrandIndex

Our measure for customer-based brand equity (CBBE) is drawn from the most extensive available online survey – the YouGov BrandIndex – which maintains an active panel of 5 million US consumers and covers over 1800 brands in 47 sectors. The access to the full YouGov database comes at a yearly subscription cost. YouGov standardized surveys comprise a set of questions that capture the stages of the marketing purchase funnel (e.g., brand awareness, purchase intent, customer satisfaction, etc.). Following previous research (Stäbler and Fischer 2020), we focused on the following eight dimensions that capture different aspects of CBBE. Specifically, "Buzz," "Impression," and "Purchase Intent" reflect pre-purchase brand perceptions; "Perceived Quality," "Perceived Value," "Reputation," "Satisfaction," and "Recommendation" reflect post-purchase brand perceptions. We report the questions for each dimension below.

Dimensions	Questions
Buzz	a. Over the PAST TWO WEEKS, which of the following brands have you heard something POSITIVE about (whether in the news, through advertising, or talking to friends and family)? b. Now, which of the following have you heard something NEGATIVE about over the PAST TWO WEEKS?
Impression	a. Overall, of which of the following brands do you have a POSITIVE impression? b. Now, which of the following brands do you have an overall NEGATIVE impression?
Purchase Intent	From which of these would you be most likely to purchase?
Perceived Quality	a. Which of the following brands do you think represents GOOD QUALITY? b. Now, which of the following brands represents POOR QUALITY?
Perceived Value	a. Which of the following brands do you think represents GOOD VALUE FOR MONEY? By that, we don't mean "cheap," but that the brands offer a customer a lot in return for the price paid. b. Now, which of the following brands do you think represents a POOR VALUE FOR MONEY? By that, we don't mean "expensive," but that the brands do not offer a customer much in return for the price paid.
Reputation	a. Imagine you were looking for a job (or advising a friend looking for a job). Which of the following brands would you be PROUD to work for? Imagine you (or your friend) were applying for the same sort of role at the following brands that you currently have or would apply for. b. Now, which of the following brands would you be EMBARRASSED TO WORK FOR? Imagine you (or your friend) were applying for the same sort of role at the following brands that you currently have or would apply for.

Satisfaction	a. Of which of the following brands would you say that you are a "SATISFIED CUSTOMER"?
	b. Of which of the following brands would you say that you are a "DISSATISFIED CUSTOMER"?
Recommendation	a. Which of the following brands would you RECOMMEND to a friend or colleague?
	b. And which of the following brands would you tell a friend or colleague to AVOID?

YouGov panel characteristics

YouGov relies on online survey panels, which enable the collection of a large number of participants on a regular basis. Such surveys of large consumer panels produce responses that are reasonably stable over time. Importantly, YouGov ensures the consistency of measures by keeping the same survey questions throughout the panel's existence. YouGov maintains a representative panel by correcting for variations in the probability selection of respondents in their daily surveys. To do so, YouGov applies individual weights connected to age, race, gender, education, income, and region to select a daily pool of respondents.

Each respondent is invited to complete up to one online survey per category each month. In terms of incentives, panelists are compensated with redeemable "points" each time they complete a survey. To control for brand competition effects, YouGov asks respondents to rate competing brands within the same sector (e.g., airlines) concurrently. While panelists might be re-invited to answer the survey questions after two weeks, they are blocked from any same sector, and survey questions (e.g., customer satisfaction) answered in the previous two months. This feature ensures that survey responses are fetched from a large number of respondents on a rotating basis, alleviating repeated measurement bias and serial correlation in survey questions. YouGov reported that respondents take, on average, 24 surveys a year.

YouGov data collection illustration

In a typical YouGov online survey, respondents rate multiple brands concurrently. YouGov aims at a minimum of 100 respondents for each brand daily (with an average of 105).

Brands appear simultaneously on the screen (as we illustrate more in detail below). First, YouGov respondents are prompted with a question, "which of the following airlines have you ever heard of?" for a set of brands (23 in our illustrative example) in random order. The respondents then select those brands

(by marking them in green) that are familiar to them. This is illustrated in Figure E1. This step is important, as YouGov ensures that respondents can answer further questions only related to those brands that they know. Brands not selected in the first step (unmarked) are eliminated from further survey questions.

Figure E1. Pre-purchase Screening Question

Next, respondents are asked a question about pre-purchase brand perceptions (e.g., impression, buzz). For instance, for the buzz measure, YouGov separately asks a "positive" and "negative" brand buzz question for each respondent. We present these two questions in Figure E2. Assume that respondents have selected "Southwest" and "Alitalia" for the positive buzz and "Lufthansa" and "Delta" for the negative buzz. Respondents cannot select the same brands for both positive and negative buzz. This ensures that the perceptions of each respondent should tend towards the positive or negative continuum for each brand.

Figure E2. Brand Buzz Questions

Other respondents might answer a customer status question, which is followed by another brand perceptions question. For illustrative purposes, we assume that the respondent purchased a flight from KLM, Southwest, Delta, United, Lufthansa, Alitalia, and American Airlines in the past 12 months. This is illustrated in Figure E3. Brands that were not selected in this step are eliminated from further questions.

Figure E3. Post-purchase Screening Question

For the brands selected in Figure E3, the respondents will see another question that can capture post-purchase attitudes (e.g., perceived quality, perceived value, customer satisfaction, etc.). Thus, post-purchase questions are guarded based on customer status. This ensures that respondents have experienced the brand and thus are able to express their post-purchase brand perceptions. For instance, for the satisfaction measure, YouGov separately asks a "positive" (i.e., satisfaction) and "negative" (i.e., dissatisfaction) question for each respondent.

Figure E4. Customer Satisfaction Questions

YouGov

Of which of the following airlines would you say that you are a "DISSATISFIED CUSTOMER"?

Please select all that apply.

| American Airlines | United | Lufthansa | KLM | Delta |
| Southwest | Alitalia | | | |

‹   ›

Appendix F. Peers-of-Peers Construction

We acquired the primary and secondary two-digit SIC codes for each firm's business segments from Compustat's segment file. We defined a focal firm's peers (i.e., first-degree peers) as all the firms operating in the same two-digit SIC code as the focal firm. We defined the focal firm's peers-of-peers (i.e., second-degree peers) as all the firms that are not operating in the same two-digit SIC code as the focal firm but are operating in the same two-digit SIC code as the focal firm's peers. For each firm, we constructed its peers and peers-of-peers.

In Figure F1, we used Microsoft Corporation as a focal firm to demonstrate the process of constructing peers and peers-of-peers firms. For demonstration purposes, we only included a subset of the firms and the industries in which each firm operates.

Figure F1. Demonstration of Peers-of-Peers
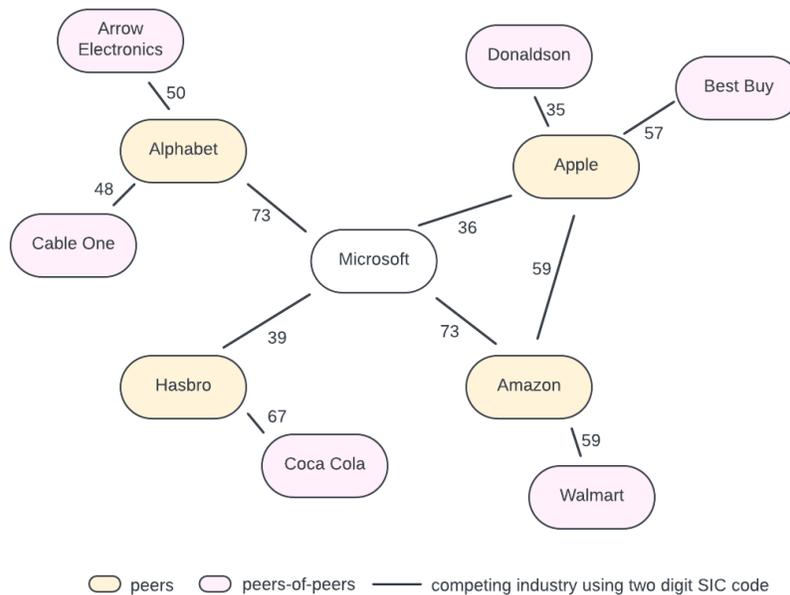
Microsoft Corporation operated in three industries: SIC 36 (Electronic & Other Electrical Equipment & Components), SIC 39 (Miscellaneous Manufacturing), and SIC 73 (Business Services). Microsoft's peers are the firms that have business in any of these three industries. As shown in Figure G1, four firms are Microsoft's peers: Alphabet and Amazon, which compete with Microsoft in SIC 73, Apple in SIC 36, and Hasbro in SIC 39. Six firms are Microsoft's peers-of-peers: Walmart, Best Buy, Donaldson, Coca-Cola, Cable One, and Arrow Electronics. They are peers of Microsoft's peers (i.e.,

Alphabet, Amazon, Apple, and Hasbro), but they do not directly compete with Microsoft. For example, Walmart competes with Amazon in the SIC 59 (Miscellaneous Retail) industry, which is outside Microsoft's operating industries, making Walmart a peer-to-peer to Microsoft.

Appendix G. Empirical Details, Additional Analyses, and Robustness Checks

First stage results

In Table G1, we provide the details of the first-stage results.

Table G1: First-Stage Results using Peers-of-Peers

	First-stage estimates for endogenous variables					
	E Performance		S Performance		G Performance	
Instrument for E	1.192***	(0.013)	0.244***	(0.010)	0.385***	(0.009)
Instrument for S	0.177***	(0.011)	1.139***	(0.009)	0.241***	(0.008)
Instrument for G	-0.648***	(0.021)	-0.648***	(0.017)	0.093***	(0.015)
R&D intensity	-0.001+	(0.000)	0.002***	(0.000)	0.000	(0.000)
ROA	0.361***	(0.067)	-0.110*	(0.053)	0.081+	(0.046)
Firm size	4.518***	(0.023)	3.729***	(0.018)	3.701***	(0.016)
Market share	21.831***	(0.697)	17.888***	(0.551)	13.819***	(0.483)
Financial leverage	-0.004***	(0.001)	-0.004***	(0.001)	-0.002***	(0.001)
Advertising intensity	0.094***	(0.005)	0.097***	(0.004)	0.057***	(0.003)
Sales growth	-0.000	(0.000)	0.000	(0.000)	-0.000	(0.000)
Demand instability	-0.671***	(0.059)	-0.814***	(0.046)	-0.393***	(0.041)
ESG volume	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
Constant	-31.265***	(0.431)	-26.268***	(0.341)	-24.647***	(0.299)
Adjusted R^2	0.369		0.348		0.408	
First-stage F-test of excluded instruments	157.38		48.90		45.24	

Note: Standard errors in parentheses
+ $p<0.10$, * $p<0.05$, ** $p<0.01$, *** $p<0.001$

ESG and CBBE based on PCA

       To assess the robustness of our results, we replaced the averages of categories of E, S, G performances, and CBBE with the PCA scores and reported the results in Table G2 below. We find that the results continue to hold (only the association of the S performance and IIO is no longer significant at the conventional level).

Table G2: Robustness Check of ESG and CBBE Measures based on PCA

	Selection		CBBE		IIO		Idiosyncratic Risk	
E performance			.408**	(.150)	-.071**	(.026)	-.269+	(.151)
S performance			.041	(.082)	-.022	(.015)	-.215+	(.111)
G performance			-.811***	(.203)	.147***	(.036)	.377+	(.224)
Customer-Based Brand Equity							-.042***	(.009)
Institutional Investor Ownership							-.149+	(.083)
R&D intensity	.000***	(.000)	-.093	(.096)	.015	(.022)	-.548***	(.119)
ROA	-.016**	(.006)	-.708+	(.377)	.575***	(.094)	-5.925***	(.510)
Firm size			.248***	(.033)	.019*	(.008)	-.230***	(.060)
Market share	-2.862***	(.499)	.859	(.601)	-.433***	(.091)	.100	(.390)
Financial leverage	-.000*	(.000)	-.009***	(.002)	-.001	(.001)	.019**	(.006)
Advertising intensity	.033***	(.007)	.001	(.002)	-.000	(.000)	-.002	(.001)
Sales growth	-.000+	(.000)	.005+	(.003)	.000	(.002)	.006	(.007)
Demand instability	-.197***	(.008)	.010	(.020)	.001	(.003)	.010	(.017)
Log (Sales)	.182***	(.009)						
ESG volume			-.000*	(.000)	.000	(.000)	-.000*	(.000)
Control Function for E			-.367*	(.149)	.064*	(.025)	.302*	(.152)
Control Function for S			-.001	(.079)	.024+	(.014)	.159	(.098)
Control Function for G			.802***	(.203)	-.156***	(.036)	-.472*	(.232)
Constant	-1.469***	(.005)	-.069	(.208)	-.657***	(.023)	.025	(.116)
Control for firm-specific effects			Yes		Yes		Yes	
Control for time effects			Yes		Yes		Yes	

Note: Standard errors are in parentheses. The coefficients and standard errors in the Idiosyncratic Risk column are multiplied by 100.
Log (Sales) is an instrument in the selection equation. Control functions are estimated using peers-of-peers ESG as instruments.
+ $p<0.10$, * $p<0.05$, ** $p<0.01$, *** $p<0.001$

Peer measures as instruments

Instead of using peers-of-peer firms' ESG measures as instruments, we used peer firms-based metrics (Germann et al. 2015) as a robustness check. We defined a focal firm's peers (i.e., first-degree peers) as all the firms operating in the same 2-digit SIC code as the focal firm. Table G3 shows the results when using peer firms' average E, S, and G performances as instruments. We find that the results continue to hold (only the association of the S performance and IIO is no longer significant at the conventional level).

Table G3: Robustness Check of Peer Measures as Instruments

	Selection		CBBE		IIO		Idiosyncratic Risk	
E performance			.042+	(.023)	-.003*	(.001)	-.015*	(.007)
S performance			.010	(.019)	-.002+	(.001)	-.012+	(.007)
G performance			-.184***	(.044)	.010***	(.002)	.025	(.015)
Customer-Based Brand Equity							-.011***	(.002)
Institutional Investor Ownership							-.151+	(.082)
R&D intensity	.000***	(.000)	-.302	(.333)	.014	(.023)	-.543***	(.119)
ROA	-.016**	(.006)	-2.607+	(1.381)	.570***	(.095)	-5.917***	(.510)
Firm size			.978***	(.120)	.020*	(.008)	-.227***	(.062)
Market share	-2.862***	(.499)	3.224	(2.134)	-.433***	(.091)	.121	(.391)
Financial leverage	-.000*	(.000)	-.033***	(.006)	-.001	(.001)	.019**	(.006)
Advertising intensity	.033***	(.007)	.007	(.005)	-.000	(.000)	-.002	(.001)
Sales growth	-.000+	(.000)	.018	(.012)	.000	(.002)	.006	(.007)
Demand instability	-.197***	(.008)	.027	(.071)	.001	(.003)	.011	(.017)
Log (Sales)	.182***	(.009)						
ESG volume			-.000*	(.000)	.000	(.000)	-.000*	(.000)
Control Function for E performance			-.036	(.022)	.003*	(.001)	.016*	(.007)
Control Function for S performance			-.003	(.018)	.002+	(.001)	.008	(.006)
Control Function for G performance			.186***	(.044)	-.010***	(.002)	-.031+	(.016)
Constant	-1.469***	(.005)	-.213	(.724)	-.656***	(.023)	.030	(.114)
Control for firm-specific effects			Yes		Yes		Yes	
Control for time effects			Yes		Yes		Yes	

Note: Standard errors are in parentheses. The coefficients and standard errors in the Idiosyncratic Risk column are multiplied by 100.

Log (Sales) is an instrument in the selection equation. Control functions are estimated using peer ESG as instruments.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Alternative estimation method: structural equation modeling (SEM)

As an alternative to the CMP maximum likelihood estimator, we estimated the model using SEM, which allows us to test mediation and moderation in a single step. We used the two-step Heckman procedure to tackle the selection bias – we included the inverse Mills ratio from the selection equation to the system of equations. We report the results in Table G4. Our findings continue to hold.

Table G4: Robustness Check of Results with SEM

	Selection		CBBE		IIO		Idiosyncratic Risk	
E performance			.055*	(.024)	-.004**	(.001)	-.012	(.008)
S performance			.006	(.018)	-.002+	(.001)	-.012*	(.006)
G performance			-.191***	(.044)	.011***	(.002)	.022	(.014)
Customer-Based Brand Equity							-.011***	(.003)
Institutional Investor Ownership							-.153**	(.058)
R&D intensity	.000***	(.000)	-.265	(.534)	.019	(.029)	-.556**	(.171)
ROA	-.016	(.017)	-2.265	(1.504)	.564***	(.081)	-5.926***	(.494)
Firm size			1.003***	(.114)	.019**	(.006)	-.231***	(.037)
Market share	-2.862***	(.338)	2.031	(1.479)	-.418***	(.080)	.132	(.474)
Financial leverage	-.000	(.000)	-.033***	(.006)	-.001+	(.000)	.019***	(.002)
Advertising intensity	.033***	(.001)	.014**	(.005)	-.000	(.000)	-.002	(.001)
Sales growth	.000	(.000)	.020	(.030)	.000	(.002)	.006	(.010)
Demand instability	-.197***	(.008)	-.045	(.061)	.002	(.003)	.014	(.020)
Log (Sales)	.182***	(.011)						
ESG volume			-.000***	(.000)	.000	(.000)	-.000+	(.000)
Control Function for E			-.049*	(.024)	.004**	(.001)	.013+	(.008)
Control Function for S			.001	(.017)	.002*	(.001)	.008	(.006)
Control Function for G			.193***	(.044)	-.012***	(.002)	-.028+	(.014)
Inverse Mill's Ratio			.414+	(.223)	-.003	(.012)	-.018	(.071)
Constant	-1.469***	(.005)	-1.048*	(.482)	-.649***	(.026)	.064	(.159)
Control for firm-specific effects			Yes		Yes		Yes	
Control for time effects			Yes		Yes		Yes	

Note: Standard errors are in parentheses. The coefficients and standard errors in the Idiosyncratic Risk column are multiplied by 100.

Log (Sales) is an instrument in the selection equation. Control functions are estimated using peer-of-peer ESG as instruments.

For the first-stage Probit selection equation, Pseudo R^2 is .0320, and the log-likelihood is -35045.235. For SEM, the log-likelihood is 14120.909.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Employee and Media as Additional Stakeholders

In addition to consumers and institutional investors, we considered the role of employees and the media as two other stakeholders in our model. For employees, we consulted previous research that analyzed employees and proxied employee reputation with Fortune's data on the "100 Best Companies to Work For" (Edmans 2011; Ertugrul 2013). The list recognizes and ranks the top 100 companies in the US based on their workplace culture and employee satisfaction. The ranking is determined through a comprehensive assessment of factors, such as employee feedback, company program and workplace strategy, workplace diversity and inclusion, opportunities for career growth, and overall corporate culture. The list reflects the companies known for providing exceptional working environments and treating their employees well.

After getting the list from 2012 to 2020 and matching it with the main dataset for analysis, we transformed the original ranking list by inverting the values assigned to each company. Specifically, the firm that was originally ranked at the top was assigned a value of 100, while the company that was originally ranked 100th was given a value of 1. For the companies that were not included in the original list, we assigned them a value of 0.

To examine the relationship between ESG and media (a secondary stakeholder), we obtained news information from RavenPack News Analytics. RavenPack News Analytics is a unique source of explanatory and predictive inputs derived from leading publishers, web aggregators, global media organizations, and others. It automatically monitors relevant news information on thousands of companies and classifies and quantifies the news items according to their sentiment, relevance, topic, novelty, and market impact (Warren and Sorescu 2017a; Warren and Sorescu 2017b; Malshe et al. 2020; Varma et al. 2023).

RavenPack identifies five news topics for entities: business, economy, environment, society, and politics. We deliberately excluded news topics related to environmental and society issues because we already included a measure of E, S, and G volume of news as a control variable. Next, we aggregated the sentiments related to business, economy, and politics to generate a single variable to measure media perception.

In Table G5, we present results with employees and media as other stakeholders. We find that our main findings continue to hold. In addition, we find negative associations between E and S performances and media sentiment and a positive association between G performance and media sentiment; we also find a marginally significant and positive relationship between S performance and employee reputation.

Table G5. Results with Employee and Media as Additional Stakeholders

	Selection		CBBE		Employee Reputation		Media Sentiment		IIO		Idiosyncratic Risk	
E performance			.053*	(.023)	.029	(.051)	-.449***	(.117)	-.004**	(.001)	-.012+	(.007)
S performance			.005	(.018)	.061+	(.036)	-.243**	(.084)	-.002*	(.001)	-.012+	(.007)
G performance			-.187***	(.043)	-.093	(.087)	1.187***	(.211)	.011***	(.002)	.021	(.015)
Customer-Based Brand Equity											-.011***	(.002)
Institutional Investor Ownership											-.156+	(.082)
Employee											-.001+	(.001)
Media											-.000	(.001)
R&D intensity	.000***	(.000)	-.266	(.315)	1.241	(.847)	2.499	(2.394)	.019	(.022)	-.554***	(.119)
ROA	-.016**	(.006)	-2.582+	(1.380)	7.539	(5.336)	13.581+	(7.116)	.567***	(.094)	-5.899***	(.511)
Firm size			.959***	(.120)	1.101***	(.279)	-2.081**	(.659)	.020*	(.008)	-.227***	(.060)
Market share	-2.862***	(.499)	2.916	(2.128)	-9.012**	(3.476)	-22.825**	(8.694)	-.424***	(.091)	.079	(.391)
Financial leverage	-.000*	(.000)	-.033***	(.006)	-.007*	(.003)	.050	(.031)	-.001	(.001)	.019**	(.006)
Advertising intensity	.033***	(.007)	.007	(.005)	.008	(.012)	.001	(.031)	-.000	(.000)	-.002	(.001)
Sales growth	-.000+	(.000)	.018	(.012)	-.002	(.020)	.183	(.194)	.000	(.002)	.006	(.007)
Demand instability	-.197***	(.008)	.024	(.070)	-.560**	(.190)	.201	(.370)	.001	(.003)	.011	(.018)
Log (Sales)	.182***	(.009)										
ESG volume			-.000*	(.000)	-.000	(.000)	-.000***	(.000)	.000	(.000)	-.000*	(.000)
Control Function for E			-.048*	(.023)	-.001	(.050)	.487***	(.116)	.004**	(.001)	.013+	(.007)
Control Function for S			.002	(.018)	-.022	(.033)	.239**	(.081)	.002*	(.001)	.008	(.006)
Control Function for G			.190***	(.043)	.097	(.086)	-1.168***	(.210)	-.012***	(.002)	-.027+	(.015)
Constant	-1.469***	(.006)	-.216	(.713)	1.701	(1.360)	-26.873***	(3.742)	-.655***	(.023)	.027	(.112)
Firm fixed effects			Yes		Yes		Yes		Yes		Yes	
Year-quarter fixed effects			Yes		Yes		Yes		Yes		Yes	

Note: Standard errors are in parentheses. The coefficients and standard errors in the Idiosyncratic Risk column are multiplied by 100.

Log (Sales) is an instrument in the selection equation. Control functions are estimated using peers-of-peers ESG as instruments.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Alternative firm-level risk measures

We report results with other risks below, including total risk as the variability of a firm's stock returns, earnings dispersion as the variability in a firm's earnings, and bankruptcy risk as the Altman Z-score. We used the variability of a firm's stock returns (i.e., the standard deviation of daily stock returns over each quarter) to measure total risk following prior research (Kashmiri and Mahajan 2017; Sorescu and Spanjol 2008). We used the variability in a firm's earnings (i.e., the standard deviation of a firm's earnings over each quarter) to measure earnings dispersion, which captures firm risk at an aggregated level (Jorgensen et al. 2012). We measured bankruptcy risk as Altman Z-score, which is calculated as

$$Z = 1.2A + 1.4B + 3.3C + 0.6D + 1.0E,$$

where A = working capital / total assets, B = retained earnings / total assets, C = earnings before interest and tax / total assets, D = market value of equity / total liabilities, and E = sales / total assets (Altman 2000). Altman Z-score is widely used to evaluate a firm's credit risk. A higher Altman Z-score is generally indicative of a lower risk of bankruptcy or financial distress, while a lower Altman Z-score suggests a higher risk (for review, see Altman et al. 2017). We estimated the associations between ESG and the Altman Z-score using SEM due to the non-convergence of CMP.

Table G6 shows that all our findings continue to hold using total risk. Table G7 shows that the association between institutional investor ownership and earnings dispersion is significantly negative, while CBBE does not have a significant association with earnings dispersion. Table G8 shows that both CBBE and institutional investor ownership are positively associated with the Altman Z-score. Since a higher Altman Z-score is generally indicative of a lower risk of bankruptcy or financial distress, while a lower Altman Z-score suggests a higher risk, our findings continue to hold using the Altman Z-score.

To understand the importance of ESG performance from the perspective of portfolio risk management, we used systematic risk as another dependent variable. Systematic risk is measured by β_i^{MKT} in Equation 1, which is part of firm stock risk explained by the changes in the average market portfolio returns r_d^{MKT}. A firm's sensitivity to the average changes in market portfolio returns is common to all stocks. Table G11 shows that our findings of E, S, and G performances on CBBE and IIO continue to hold. In addition, CBBE and IIO increase systematic risk. The positive association between IIO and systematic risk could be attributed to institutional investors' herding behavior in response to significant market fluctuations (Dennis and Strickland 2002). We believe that exploring the underlying reasons and boundary conditions of the positive association between CBBE and IIO and systematic risk, could be a fruitful research opportunity for future studies.

Table G6. Results Using Total Risk

	Selection		CBBE		IIO		Total Risk	
E performance			.053*	(.023)	-.004**	(.001)	-.013+	(.007)
S performance			.005	(.018)	-.002*	(.001)	-.011	(.007)
G performance			-.187***	(.043)	.011***	(.002)	.029+	(.016)
Customer-Based Brand Equity							-.010***	(.003)
Institutional Investor Ownership							-.229**	(.087)
R&D intensity	.000***	(.000)	-.266	(.315)	.019	(.022)	-.669***	(.126)
ROA	-.016**	(.006)	-2.582+	(1.381)	.567***	(.094)	-6.709***	(.546)
Firm size			.959***	(.120)	.020*	(.008)	-.197**	(.060)
Market share	-2.862***	(.499)	2.916	(2.133)	-.424***	(.091)	-.379	(.461)
Financial leverage	-.000*	(.000)	-.033***	(.006)	-.001	(.001)	.019**	(.006)
Advertising intensity	.033***	(.007)	.007	(.005)	-.000	(.000)	-.002	(.002)
Sales growth	-.000+	(.000)	.018	(.012)	.000	(.002)	.002	(.005)
Demand instability	-.197***	(.008)	.024	(.071)	.001	(.003)	.051*	(.021)
Log (Sales)	.182***	(.009)						
ESG volume			-.000*	(.000)	.000	(.000)	-.000**	(.000)
Control Function for E			-.048*	(.023)	.004**	(.001)	.014+	(.007)
Control Function for S			.002	(.018)	.002*	(.001)	.008	(.007)
Control Function for G			.190***	(.043)	-.012***	(.002)	-.035*	(.017)
Constant	-1.469***	(.005)	-.216	(.723)	-.655***	(.023)	.182	(.157)
Control for firm-specific effects			Yes		Yes		Yes	
Control for time effects			Yes		Yes		Yes	

Note: Standard errors are in parentheses. The coefficients and standard errors in the Total Risk column are multiplied by 100.

Log (Sales) is an instrument in the selection equation. Control functions are estimated using peers-of-peers ESG as instruments.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table G7. Results Using Earnings Dispersion

	Selection		CBBE		IIO		Earnings Dispersion	
E performance			.053*	(.023)	-.004**	(.001)	.002*	(.001)
S performance			.005	(.018)	-.002*	(.001)	.001	(.001)
G performance			-.187***	(.043)	.011***	(.002)	-.004*	(.002)
Customer-Based Brand Equity							.000	(.000)
Institutional Investor Ownership							-.055***	(.009)
R&D intensity	.000***	(.000)	-.266	(.315)	.019	(.022)	-.013	(.011)
ROA	-.016**	(.006)	-2.582+	(1.381)	.567***	(.094)	-.259***	(.057)
Firm size			.959***	(.120)	.020*	(.008)	.024***	(.005)
Market share	-2.862***	(.499)	2.916	(2.135)	-.424***	(.091)	-.165**	(.053)
Financial leverage	-.000*	(.000)	-.033***	(.006)	-.001	(.001)	.001	(.001)
Advertising intensity	.033***	(.007)	.007	(.005)	-.000	(.000)	.000	(.000)
Sales growth	-.000+	(.000)	.018	(.012)	.000	(.002)	-.000	(.001)
Demand instability	-.197***	(.008)	.024	(.071)	.001	(.003)	.001	(.003)
Log (Sales)	.182***	(.009)						
ESG volume			-.000*	(.000)	.000	(.000)	-.000	(.000)
Control Function for E			-.048*	(.023)	.004**	(.001)	-.002*	(.001)
Control Function for S			.002	(.018)	.002*	(.001)	-.001+	(.001)
Control Function for G			.190***	(.043)	-.012***	(.002)	.004*	(.002)
Constant	-1.469***	(.005)	-.216	(.729)	-.655***	(.023)	.023	(.024)
Control for firm-specific effects			Yes		Yes		Yes	
Control for time effects			Yes		Yes		Yes	

Note: Standard errors are in parentheses.

Log (Sales) is an instrument in the selection equation. Control functions are estimated using peers-of-peers ESG as instruments.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table G8. Results Using Altman Z-score

	Selection		CBBE		IIO		Altman Z-score	
E performance			.055*	(.024)	-.004**	(.001)	.007	(.017)
S performance			.006	(.018)	-.002+	(.001)	.009	(.012)
G performance			-.191***	(.044)	.011***	(.002)	-.018	(.031)
Customer-Based Brand Equity							.015*	(.007)
Institutional Investor Ownership							.507***	(.127)
R&D intensity	.000***	(.000)	-.265	(.534)	.019	(.029)	7.001***	(.334)
ROA	-.016	(.017)	-2.265	(1.504)	.564***	(.081)	22.091***	(1.034)
Firm size			1.003***	(.114)	.019**	(.006)	-.432***	(.078)
Market share	-2.862***	(.338)	2.031	(1.479)	-.418***	(.080)	1.118	(.992)
Financial leverage	-.000	(.000)	-.033***	(.006)	-.001+	(.000)	-.015*	(.006)
Advertising intensity	.033***	(.001)	.014**	(.005)	-.000	(.000)	-.000	(.003)
Sales growth	.000	(.000)	.020	(.030)	.000	(.002)	-.470***	(.083)
Demand instability	-.197***	(.008)	-.045	(.061)	.002	(.003)	-.055	(.041)
Log (Sales)	.182***	(.011)						
ESG volume			-.000***	(.000)	.000	(.000)	-.000***	(.000)
Control Function for E performance			-.049*	(.024)	.004**	(.001)	-.008	(.016)
Control Function for S performance			.001	(.017)	.002*	(.001)	-.003	(.011)
Control Function for G performance			.193***	(.044)	-.012***	(.002)	.016	(.031)
Inverse Mill's Ratio			.414+	(.223)	-.003	(.012)	.093	(.145)
Constant	-1.469***	(.005)	-1.048*	(.482)	-.649***	(.026)	.110	(.328)
Control for firm-specific effects			Yes		Yes		Yes	
Control for time effects			Yes		Yes		Yes	

Note: Standard errors are in parentheses .

Log (Sales) is an instrument in the selection equation. Control functions are estimated using peers-of-peers ESG as instruments.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

References

Altman, E. I. 2000. Predicting Financial Distress of Companies: Revisiting the Z-Score and ZETA Models. https://pages.stern.nyu.edu/~ealtman/Zscores.pdf.

Altman, E. I., M. Iwanicz-Drozdowska, E. K. Laitinen, A. Suvas. 2017. Financial Distress Prediction in an International Context: A Review and Empirical Analysis of Altman's Z-Score Model *Journal of International Financial Management & Accounting* **28** (2): 131–71.

Bansal, P., I. Clelland. 2004. Talking Trash: Legitimacy, Impression Management, and Unsystematic Risk in the Context of the Natural Environment. *The Academy of Management Journal*. **47**(1): 93–103.

Bauer, R., J. Derwall, D. Hann. 2009. Employee Relations and Credit Risk. SSRN Scholarly Paper, Rochester, NY.

Beal, B.D. 2014. Corporate Social Responsibility: Definition, Core Issues, and Recent Developments, Los Angeles: SAGE.

Benlemlih, M., A. Shaukat, Y. Qiu, G. Trojanowski. 2018.Environmental and Social Disclosures and Firm Risk *Journal of Business Ethics.* **152** (3): 613–26.

Bouslah, K., L. Kryzanowski, B. M'Zali. 2013. The impact of the dimensions of social performance on firm risk *Journal of Banking & Finance*. **37** (4): 1258–73.

Deloitte. 2021. What is ESG? *Deloitte*, (accessed January 29, 2023), https://www2.deloitte.com/ce/en/pages/global-business-services/articles/esg-explained-1-what-is-esg.html.

Dennis, P. J., D.Strickland 2002. Who Blinks in Volatile Markets, Individuals or Institutions?, *The Journal of Finance*, **57** (5):1923–49.

Edmans, A. 2011. Does the stock market fully value intangibles? Employee satisfaction and equity prices. *Journal of Financial Economics*, **101** (3): 621–40.

Edmans, A. 2021. Grow the Pie: How Great Companies Deliver Both Purpose and Profit, Cambridge University Press.

Ertugrul, M. 2013. Employee-Friendly Acquirers and Acquisition Performance. *Journal of Financial Research* **36** (3): 347–70.

Freeman, R. E., S. R. Velamuri. 2006. A New Approach to CSR: Company Stakeholder Responsibility. *Corporate Social Responsibility: Reconciling Aspiration with Application*, A. Kakabadse and M. Morsing, eds., London: Palgrave Macmillan UK 9–23.

Friedman, M. 1970. A Friedman doctrine-- The Social Responsibility of Business Is to Increase Its Profits. *The New York Times*.

Germann, F., P. Ebbes, R. Grewal. 2015. The Chief Marketing Officer Matters! *Journal of Marketing*, **79** (3): 1–22.

Gillan, S. L., A. Koch, L. T. Starks. 2021. Firms and social responsibility: A review of ESG and CSR research in corporate finance. *Journal of Corporate Finance*, **66**, 101889.

Gnanarajah, R., G. Shorter 2023. Introduction to Financial Services: Environmental, Social, and Governance (ESG) Issues. *Congressional Research Service (January 5)*.

He, F., S. Qin, Y. Liu, and J. Wu. 2022. CSR and idiosyncratic risk: Evidence from ESG information disclosure. *Finance Research Letters*, **49**, 102936.

Hughes, A., M. A. Urban, D. Wójcik. 2021. Alternative ESG Ratings: How Technological Innovation Is Reshaping Sustainable Investment. *Sustainability*, **13** (6), 3551.

IFC. 2004. Who Cares Wins: Connecting Financial Markets to a Changing World. https://www.unepfi.org/fileadmin/events/2004/stocks/who_cares_wins_global_compact_2004.pdf

IFRS. 2023a. IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information. https://www.ifrs.org/issued-standards/ifrs-sustainability-standards-navigator/ifrs-s1-general-requirements/.

IFRS. 2023b. IFRS S2 Climate-related Disclosures. https://www.ifrs.org/issued-standards/ifrs-sustainability-standards-navigator/ifrs-s2-climate-related-disclosures/.

Izcan, D., E. Bektas. 2022. The Relationship between ESG Scores and Firm-Specific Risk of Eurozone Banks. *Sustainability* **14** (14): 8619.

Jones, T. M 1995. Instrumental Stakeholder Theory: A Synthesis of Ethics and Economics. *The Academy of Management Review*, **20** (2): 404–37.

Jorgensen, B., J. Li, G. Sadka. 2012. Earnings dispersion and aggregate stock returns. *Journal of Accounting and Economics* **53** (1): 1–20.

Kashmiri, S., V. Mahajan 2017. Values that Shape Marketing Decisions: Influence of Chief Executive Officers' Political Ideologies on Innovation Propensity, Shareholder Value, and Risk. *Journal of Marketing Research*. **54** (2): 260–78.

Kolstad, I. 2007. Why Firms Should Not Always Maximize Profits. *Journal of Business Ethics*. **76** (2), 137–45.

Korinth, F., R. Lueg. 2022. Corporate Sustainability and Risk Management—The U-Shaped Relationships of Disaggregated ESG Rating Scores and Risk in the German Capital Market. *Sustainability*. **14** (9): 5735.

Lee, D. D. and R.W. Faff. 2009. Corporate Sustainability Performance and Idiosyncratic Risk: A Global Perspective. *Financial Review*. **44** (2): 213–37.

Li, G., N. Li, S. P. Sethi. 2021. Does CSR Reduce Idiosyncratic Risk? Roles of Operational Efficiency and AI Innovation. *Production and Operations Management* **30**(7): 2027–2045.

Luo, X., C. B. Bhattacharya. 2006. Corporate Social Responsibility, Customer Satisfaction, and Market Value. *Journal of Marketing* **70**(4): 1–18.

Luo, X., C. B. Bhattacharya. 2009. The Debate over Doing Good: Corporate Social Performance, Strategic Marketing Levers, and Firm-Idiosyncratic Risk. *Journal of Marketing* **73**(6): 198–213.

Malshe, A., A. Colicev, V. Mittal. 2020. How Main Street Drives Wall Street: Customer (Dis)satisfaction, Short Sellers, and Abnormal Returns. *Journal of Marketing Research* **57**(6): 1055–1075.

Mishra, S., S. B. Modi. 2013. Positive and Negative Corporate Social Responsibility, Financial Leverage, and Idiosyncratic Risk. *Journal of Business Ethics*. **117**(2): 431–448.

Mishra, S., S. B. Modi. 2016. Corporate Social Responsibility and Shareholder Wealth: The Role of Marketing Capability. *Journal of Marketing*. **80** (1): 26–46.

Reber, B., A. Gold, and S. Gold. 2022. ESG Disclosure and Idiosyncratic Risk in Initial Public Offerings. *Journal of Business Ethics* **179** (3): 867–86.

Sassen, R., A.Hinze, I. Hardeck. 2016. Impact of ESG factors on firm risk in Europe. *Journal of Business Economics*. **86** (8): 867–904.

SEC. 2021. Environmental, Social and Governance (ESG) Funds – Investor Bulletin. (accessed January 29, 2023), https://www.sec.gov/oiea/investor-alerts-and-bulletins/environmental-social-and-governance-esg-funds-investor-bulletin.

Sorescu, A. B., J. Spanjol. 2008. Innovation's Effect on Firm Value and Risk: Insights from Consumer Packaged Goods. *Journal of Marketing*. **72** (2): 114–32.

Stäbler, S., M. Fischer. 2020. When Does Corporate Social Irresponsibility Become News? Evidence from More Than 1,000 Brand Transgressions Across Five Countries. *Journal of Marketing*. **84** (3): 46–67.

Varma, R., R. Bommaraju, S. S. Singh 2023. Female Chief Marketing Officers: When and Why Do Their Marketing Decisions Differ from Their Male Counterparts?. *Journal of Marketing Research* **60** (6): 1154–76.

Warren, N. L., A. Sorescu. 2017a. When 1 + 1 > 2: How Investors React to New Product Releases Announced Concurrently with Other Corporate News. *Journal of Marketing*. **81**(2):64–82.

Warren, N. L., A. Sorescu. 2017b. Interpreting the Stock Returns to New Product Announcements: How the past Shapes Investors' Expectations of the Future. *Journal of Marketing Research*. **54** (5): 799–815.