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What drives CSR specialization? The roles of relative marketing capability and market conditions

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What drives CSR specialization? The roles of relative marketing capability and market conditions

Abstract

Firms engage in corporate social responsibility (CSR) through either a generalist approach, addressing many CSR areas, or a specialist approach, focusing on a few. Most firms adopt the latter, yet little is known about what drives CSR specialization, especially the role of organizational capabilities. Drawing on resource advantage theory and dynamic capabilities theory, this study examines whether and how a firm's relative marketing capability (RMC) affects CSR specialization, and how market conditions—munificence, concentration, and dynamism—moderate this relationship. Using panel data from 855 firms across six countries (2012-2021) and a dynamic estimation method addressing endogeneity, we find that RMC positively influences CSR specialization. Furthermore, market conditions moderate the relationship between RMC and CSR specialization; firms with greater RMC specialize in CSR when they face less munificent, more concentrated, or more dynamic markets. The findings remain consistent across a battery of robustness analyses.

Keywords: Relative marketing capability, CSR specialization, Market munificence, Market concentration, Market dynamism

1. Introduction

Firms adopt varying strategies when engaging in corporate social responsibility (CSR), ranging from a generalist approach that diversifies across multiple domains (e.g., focusing equally on environmental responsibility, social contribution, and corporate governance) to a specialist approach that concentrates on one or a few selected domains (e.g., focusing only on environmental issues). In the U.S., nearly three-quarters of listed firms follow the specialist approach to CSR (Bouslah et al., 2022). CSR specialization, defined as the strategic prioritization of specific CSR domains, is influenced by a combination of internal firm characteristics and external market-based factors (Bouslah et al., 2022; Fu, Boehe, & Orlitzky, 2020). Despite its widespread adoption, limited research has examined the drivers behind CSR specialization. Understanding these drivers is crucial for two key reasons. First, CSR specialization requires firms to analyze, understand, and prioritize the expectations of critical stakeholders, which helps build stakeholder support and legitimacy, both essential for long-term growth and survival (Fu et al., 2022; Wang & Choi, 2013). Second, a specialized CSR approach enables firms to deploy their limited resources more efficiently toward high-impact discretionary activities (Bouslah et al., 2022; Fu et al., 2020).

Existing studies on CSR specialization have mainly focused on firm characteristics, such as resource endowments (e.g., slack resources, R&D expenditure, and marketing capacity) (Bouslah et al., 2022; Fu et al., 2020) or top management team attributes (e.g., CEO gender or experience) (Al-Shammari et al., 2024; Lu et al., 2025) to explain a firm's tendency to pursue specialized CSR. While these studies provide valuable insights, they tend to overlook the role of organizational capabilities. Such capabilities are critical for enabling firms to use their limited resources effectively and adaptively across both discretionary and non-discretionary activities (Hansen et al., 2023). In particular, market-facing capabilities,

those that directly interact with and respond to market and stakeholder demands, are especially relevant for driving CSR specialization (Brower & Mahajan, 2013).

Market-facing capabilities encompass functions such as marketing, sales, and customer relationship management, which collectively help firms sense, interpret, and address stakeholder expectations (Brower & Mahajan, 2013; Day, 1994). A notable example is relative marketing capability (hereinafter RMC), defined as a firm's ability, relative to industry peers, to dynamically allocate and adapt marketing resources to meet stakeholder needs and create competitive advantage (Angulo-Ruiz et al., 2018; Dutta et al., 1999; Nath et al., 2010). While prior work has shown that static marketing resources can affect the breadth of corporate social performance (Brower & Mahajan, 2013), little is known about whether dynamic market-facing capabilities like RMC drive CSR specialization. Investigating RMC's role is critical for two reasons. First, RMC reflects *efficiency* in utilizing marketing resources to both strategic and stakeholder-related goals (Yim et al., 2019). Second, as a dynamic and comparative capability, RMC captures how effectively a firm prioritizes stakeholder expectations relative to competitors (Angulo-Ruiz et al., 2018).

Given that CSR involves a firm's internal resources (Barnett & Salomon, 2006), firms must also account for the dynamic external environment to develop strategies that optimize the use of limited resources (Jung, Foege, & Nüesch, 2020). Scholars emphasize the need for firms to acquire, integrate, and deploy organizational resources and capabilities in response to evolving market conditions (Eisenhardt & Martin, 2000; Teece et al., 1997). Research indicates that firms are more likely to engage in strategic CSR under uncertain market environments (Skandera et al., 2023) and adjust their CSR initiatives according to varying market conditions (Acabado et al., 2020). Market conditions are commonly conceptualized along three dimensions (Dess & Beard, 1984): market munificence, referring to the abundance and accessibility of resources (Rosenbusch et al., 2013), market concentration,

indicating the diversity and density of competitors within a market (Kuester et al., 1999), and market dynamism, capturing the intensity and frequency of market changes (Hanvanich et al., 2006). Prior research suggests that market conditions shape managerial perceptions of uncertainty and influence strategic decisions (Jung et al., 2020). However, little is known about how these three dimensions act as contingencies in shaping CSR specialization.

To address this gap, this study draws on resource-advantage (R-A) theory and dynamic capabilities (DC) theory to investigate (1) the effect of RMC on CSR specialization and (2) whether market conditions (i.e., munificence, concentration, and dynamism) moderate this relationship. Leveraging unbalanced panel data from 855 firms across six countries (Australia, Canada, France, Japan, the U.K, and the U.S.) over 2012-2021, we adopt a novel methodological approach. We employ a super-efficiency data envelopment analysis (DEA) model to measure RMC and use an endogeneity-robust dynamic estimation technique, the generalized method of moments (GMM), to test the conceptual model. Our results show that RMC positively affects CSR specialization and that this relationship is significantly moderated by market conditions. Specifically, firms with greater RMC are more likely to specialize in CSR under less munificent, more concentrated, or more dynamic markets. Our results remain consistent across multiple robustness analyses.

This study makes several key contributions. First, it advances the CSR literature by identifying market-facing capabilities, particularly RMC, as a dynamic antecedent of CSR specialization. This contrasts with prior research that has focused mainly on static internal resources. Second, it reveals how market conditions moderate the RMC-CSR specialization relationship, demonstrating the interactive effect of internal capabilities (i.e., RMC) and external environments (i.e., market conditions). Third, it extends marketing capability literature by showing that RMC also supports firms in non-discretionary domains like CSR, beyond financial or market-oriented goals. Finally, it introduces the DEA super-efficiency

model as an innovative tool for measuring RMC, aligning with the core principles of DC theory, such as efficiency, relativity, and longitudinality, thereby offering a refined approach to evaluating capability development.

2. Literature review and conceptual framework

2.1. CSR specialization

Given the complexity of firm-stakeholder interactions and the constraints imposed by limited resources and volatile external environments, firms must make strategic choices regarding their engagement in CSR (Bouslah et al., 2022). Prior research identifies two dominant approaches: CSR diversification, where firms distribute efforts across multiple domains, and CSR specialization, where firms focus on one or a few key areas (Brower & Mahajan, 2013; Fu et al., 2020; Harrison & Klein, 2007). CSR specialization refers to a firm's deliberate prioritization of particular CSR domains (e.g., employee welfare or environmental stewardship), often influenced by resource constraints or the prominence of certain stakeholder groups (Bouslah et al., 2022; Brower & Mahajan, 2013).

To explain why firms specialize or diversify in CSR, scholars have proposed three main categories of antecedents: (1) internal resources, (2) external environment, and (3) stakeholder demand (see Table 1). First, firms with abundant slack resources—such as financial capital, human resources, R&D capabilities, or marketing assets—are typically better positioned to diversify their CSR initiatives, whereas firms with limited resources are more likely to specialize (Bouslah et al., 2022; Fu et al., 2020; Lu et al., 2025). However, much of this research adopts a static perspective, focusing on what resources firms possess rather than how they deploy them, and rarely accounts for how efficiently firms utilize their resources compared to industry peers. Second, research has highlighted that the role of external environments, including competitive intensity, dynamism, and institutional

pressures, can shape the scope and direction of CSR engagement (Acabado et al., 2020; Skandera et al., 2023). Third, stakeholder demand, particularly from salient and influential groups, can exert pressure on firms to prioritize certain CSR dimensions over others (Brower & Mahajan, 2013; Rhee et al., 2021). Despite this body of work, most studies examine these antecedents in isolation or treat them as static. To address this gap, we propose that a firm's RMC—its dynamic ability to allocate, adapt, and leverage marketing resources in response to stakeholder expectations—plays a central role in shaping CSR specialization.

[Insert Table 1 about here]

2.2. Relative marketing capability

Unlike static marketing capabilities, defined as established, routine-based processes for resource accumulation and allocation that remain relatively unchanged, RMC is inherently dynamic and comparative (Angulo-Ruiz et al., 2018). While static capabilities may serve firms well in stable environments, they often lack the responsiveness needed in volatile contexts or when stakeholder expectations shift (Feng et al., 2017). In contrast, dynamic capabilities like RMC enable firms to sense, seize, and transform marketing resources to maintain competitiveness in evolving environments (Morgan & Feng, 2024).

RMC reflects a firm's ability to allocate, adapt, and reconfigure marketing resources more effectively than its competitors in response to changing external conditions (Hunt & Madhavaram, 2020; Hunt & Morgan, 1995). Firms with higher RMC can better anticipate and respond to market dynamics, regulatory shifts, and evolving stakeholder demands (Brower & Mahajan, 2013; Morgan & Feng, 2024). This agility is especially valuable in dynamic, fast-paced markets (Day, 1994; Rahman et al., 2021). Scholars identify three core characteristics of RMC: (1) efficiency, the dynamic sensing of market shifts and stakeholder

needs; (2) relativity, outperforming competitors in strategic resource deployment; and (3) longitudinality, sustained adaptability over time (Angulo-Ruiz et al., 2018; Dutta et al., 1999; Mishra & Modi, 2016).

Theoretically, RMC is grounded in both R-A theory and DC theory. R-A theory conceptualizes competition as an evolutionary process where firms pursue comparative advantage through superior resource development and market positioning (Hunt & Morgan, 1997; Morgan & Feng, 2024). RMC contributes to this advantage by enhancing a firm's ability to deliver superior value to both customers and critical stakeholders. However, R-A theory alone underemphasizes how firms sustain such advantages through internal resource renewal (Morgan & Feng, 2024). Here, DC theory offers a complementary lens, emphasizing firms' abilities to reconfigure and adapt resources in response to environmental changes (Barney, 1991; Teece & Pisano, 1994). Together, these theories explain why RMC is a source of comparative advantage and how it can be dynamically maintained over time (Hunt & Madhavaram, 2020; Sirmon et al., 2008).

2.3. Market conditions

Market conditions play a critical role in shaping the value, utility, and adaptability of firm capabilities, particularly in marketing (Song et al., 2005). These conditions influence not only the opportunities available for resource deployment but also the risks and uncertainties that firms must manage. According to DC theory, firms must constantly reintegrate, reconfigure, and redeploy their capabilities to maintain competitiveness in volatile, uncertain, and complex environments (Teece, 2018; Teece et al., 1997). To better understand how firms adapt, we distinguish between static and dynamic market conditions. Static conditions involve stability and predictability in market structure and demand, which tend to favor

routine-based, operational capabilities (Zollo & Winter, 2002). Conversely, dynamic market conditions, characterized by frequent, unpredictable shifts in competition, regulation, and consumer behavior, necessitate adaptive and responsive capabilities such as RMC (Feng et al., 2017).

Building on prior literature (Dess & Beard, 1984; Han et al., 2017; Skandera et al., 2023), we classify market conditions into three interrelated dimensions. *Market munificence* refers to the extent to which a market offers sufficient resources and growth opportunities for existing firms and new entrants to sustain and expand their operations (Jung et al., 2020; Rosenbusch et al., 2013). *Market concentration* reflects the number and diversity of competitors operating within a given market (Dess & Beard, 1984; Flammer, 2015). *Market dynamism* refers to the frequency and magnitude of unpredictability and uncertainty in the marketplace (Hanvanich et al., 2006; Wilden & Gudergan, 2015; Xue et al., 2012).

These three conditions collectively contribute to environmental uncertainty, which complicates the development and execution of long-term strategies, including those related to CSR (Bai & Chang, 2015; Skandera et al., 2022). While market dynamism introduces volatility, fluctuations in munificence and shifts in concentration create ambiguity around competitive positioning and resource allocation (Feng et al., 2017). Firms with higher RMC are better equipped to interpret and respond to such uncertainty by tailoring both marketing and CSR strategies to align with external pressures and stakeholder expectations (Brower & Mahajan, 2013). Therefore, we argue that market conditions moderate the relationship between RMC and CSR specialization by influencing how firms deploy their marketing capabilities under uncertainty. Figure 1 illustrates a visual representation of the research model.

[Insert Figure 1 about here]

3. Hypotheses development

3.1. The effect of relative marketing capability on CSR specialization

We conceptualize CSR specialization and generalization as opposite ends of a strategic continuum. CSR specialization entails a firm's concentrated focus on one or a few CSR domains, such as environmental sustainability or community welfare, while CSR generalization involves a more balanced distribution of efforts across multiple CSR domains (i.e., environmental, social, and governance), often aiming to address a broader spectrum of stakeholder concerns (Fu et al., 2020). Although both strategies are legitimate, specialization enables firms to allocate resources more selectively and reinforce strategic differentiation (Al-Shammari et al., 2025; Bouslah et al., 2022).

We argue that RMC, as a core market-facing capability, drives CSR specialization by enabling firms to proactively sense, interpret, and prioritize stakeholder expectations (Morgan & Feng, 2024; Morgan & Slotegraaf, 2012). Firms with higher RMC are better positioned to acquire, interpret, and act on insights from customers, competitors, channel members, and other stakeholders (Morgan & Slotegraaf, 2012). This enhanced sensitivity allows firms not only to understand stakeholder demands but also to discern which demands are most salient, legitimate, and strategically aligned (Brower & Mahajan, 2013). Rather than encouraging broad-based CSR engagement that may dilute strategic focus, RMC facilitates informed trade-offs. It enables firms to target CSR investments in areas that best align with their strategic positioning and value propositions (Mishra & Modi, 2016). In this sense, specialization is not a passive narrowing of scope, but a deliberate, capability-driven strategy to align CSR with competitive advantage.

According to R-A theory, RMC contributes to comparative advantage by helping firms identify and serve stakeholder segments that enhance strategic differentiation (Morgan & Feng, 2024). From an "outside-in" perspective, firms with superior RMC can continuously

track, interpret, and respond to shifting stakeholder preferences (Day, 1994; Hunt & Morgan, 1995, 1997; Mishra & Modi, 2016). Furthermore, drawing on DC theory, RMC enables firms to adapt and reconfigure their CSR strategies over time in response to environmental volatility (Barney, 1991; Teece et al., 1997). Thus, when firms leverage RMC to engage specific stakeholder segments or societal issues, they are more likely to pursue CSR specialization by focusing on domains that yield the greatest strategic and reputational returns. Therefore, we hypothesize:

H1: A higher level of relative marketing capability will increase firms' CSR specialization.

3.2. The moderating effects of market conditions

3.2.1. Market munificence

In highly munificent markets, firms generally have access to abundant resources and are less dependent on specific stakeholder groups for their survival and support (Jung et al., 2020). Such abundance can substitute for capability-driven prioritization, potentially leading to the underutilization of even valuable capabilities (Teng & Cummings, 2002). In these environments, the adaptation function of RMC becomes less critical, as excess resources buffer the effects of slower or less precisely targeted CSR responses, while the reconfiguration function is activated less frequently because firms can afford to maintain overlapping or redundant CSR programs without immediate penalties (Teng & Cummings, 2002; Wang & Zhu, 2025). High market munificence can also hinder effective deployment of corporate marketing capabilities (Rahman et al., 2021; Wang & Zhu, 2025). Previous studies show that in such contexts, managers tend to exhibit overconfidence, status quo bias, and a reduced motivation to reallocate resources effectively (Wang & Zhu, 2025). Because RMC is a dynamic capability most valuable when the external environment demands targeted

adaptability and strategic responsiveness (Morgan & Slotegraaf, 2012; Teece et al., 1997), its importance diminishes in resource-rich environments. The abundance of idle resources and reduced reliance on specific stakeholders lessen the urgency to deploy RMC toward particular CSR domains.

Conversely, low-munificence markets are characterized by resource scarcity and limited growth opportunities, which intensify competition and strategic constraints. Firms in these environments rely more heavily on key stakeholders to maintain operational viability (Jung et al., 2020). Under such conditions, each CSR investment carries a high opportunity cost. Resource scarcity activates RMC's dynamic routines of allocation, adaptation, and reconfiguration, resulting in a strong specialization effect (Hunt & Madhavaram, 2020; Teng & Cummings, 2002). Firms with high RMC are particularly adept at sensing market signals, strategically directing scarce resources to CSR domains that yield the greatest strategic value (Krasnikov & Jayachandran, 2008). By enabling targeted allocation of limited resources, RMC supports a more focused and specialized CSR approach (Hillman & Keim, 2001; Jung et al., 2020; Skandera et al., 2023). Thus, in low-munificent environments, the strategic utility of RMC in driving CSR specialization becomes especially pronounced. Consequently, we hypothesize:

H2: Market munificence negatively moderates the relationship between relative marketing capability and CSR specialization, such that the positive effect of relative marketing capability on CSR specialization is weaker in more munificent environments.

3.2.2. Market concentration

As a key structural characteristic of market conditions, market concentration shapes the intensity of competitive pressures firms face and influences strategic behaviors, including CSR engagement (Flammer, 2015). In less concentrated markets with many competitors, firms often increase CSR efforts to differentiate themselves and strengthen their reputational standing among a broad and heterogeneous stakeholder base (Dupire & M’Zali, 2018). Such fragmentation creates a noisy and sometimes contradictory signal environment, forcing even high-RMC firms to expend significant effort filtering and reconciling multiple legitimacy demands (Feng et al., 2017). The breadth of salient CSR issues in these markets encourages diversified CSR portfolios to address varied stakeholder expectations, thereby diluting RMC’s ability to drive specialization (Dupire & M’Zali, 2018; Kemper et al., 2013).

In contrast, highly concentrated markets are dominated by a few large, visible, and relatively stable competitors. Stakeholder expectations tend to be more uniform, as a small set of industry leaders and influential stakeholders shape the CSR agenda (Rosenbusch et al., 2013; Skandera et al., 2023). This concentrated signal environment reduces noise, enabling high-RMC firms to deploy their sensing and prioritization routines with greater precision and efficiency (Feng et al., 2017). While dominant CSR issues are clear to all firms in such contexts, high-RMC firms differentiate themselves through strategic deepening, whereby they allocate, adapt, and reconfigure marketing resources to embed focal CSR domains into core market positioning and stakeholder management. This deepening process inherently drives CSR specialization, reinforcing core competencies and strategic positioning (Rahman et al., 2021; Xue et al., 2012). By accurately interpreting stakeholder priorities, these firms can focus CSR efforts on the most salient issues, achieving greater impact through targeted initiatives (Rosenbusch et al., 2013). Thus, market concentration strengthens RMC’s capacity to channel resources toward the most strategically relevant CSR domains, amplifying its effect on CSR specialization. Hence, we hypothesize:

H3: Market concentration positively moderates the relationship between relative marketing capability and CSR specialization, such that the positive effect of relative marketing capability on CSR specialization is stronger in more concentrated markets.

3.2.3. Market dynamism

In highly dynamic markets, stakeholder needs and expectations evolve rapidly, creating substantial challenges for firms in identifying, prioritizing, and responding to market-relevant demands (Bai & Chang, 2015; Rahman et al., 2021; Skandera et al., 2023). Such conditions intensify the advantage of high RMC, as these firms can more effectively sense and interpret emerging stakeholder signals, adapt CSR priorities quickly, and concentrate resources on domains most relevant to evolving market conditions. Drawing on DC theory, firms with stronger adaptive capabilities are better positioned to reconfigure internal competencies and integrate external knowledge in response to market turbulence (Teece et al., 1997; Teece & Pisano, 1994). Under high market dynamism, this adaptive capability makes RMC particularly valuable, as the heightened need for precise prioritization and rapid redeployment strengthens its impact on CSR specialization (Makadok, 2001; Wilden & Gudergan, 2015). In such environments, RMC not only supports agility but also channels adaptation toward focused CSR domains, amplifying its effect on specialization.

In contrast, in less dynamic markets, where stakeholder expectations evolve slowly and market structures remain relatively stable, firms face lower pressure to continuously reconfigure strategies (Rosenbusch et al., 2013). In such stable contexts, the need for advanced sensing routines or rapid reconfiguration is reduced because the external environment presents fewer surprises. Resource allocation decisions are less constrained by

sudden change, diminishing the comparative advantage of RMC. Consequently, even firms with lower RMC may successfully implement broad CSR initiatives, reducing the differentiation potential of specialization (Li & Liu, 2014). Therefore, we hypothesize:

H4: Market dynamism positively moderates the relationship between relative marketing capability and CSR specialization, such that the positive effect of relative marketing capability on CSR specialization is stronger under higher market dynamism.

4. Methodology

4.1 Sample

We collected data from multiple reliable sources, including Thomson Reuters Refinitive Eikon (hereinafter Eikon), Compustat, World Bank, and Heritage Foundation, in the following steps. Initially, we retrieved environmental (E), social (S), and governance (G) data from the Eikon database, which is widely recognized for its reliability in measuring CSR-related constructs (Attig et al., 2016; Fu et al., 2020). We began by selecting all firms based in the top 15 countries by GDP from 2012 to 2021, excluding those from countries with missing ESG data. To avoid the downward bias in coefficient estimates associated with small cross-sectional samples (Judson & Owen, 1999), we retained only countries with at least 50 firms reporting data throughout the sample period. This resulted in the inclusion of firms from six advanced economies—Australia, Canada, France, Japan, the U.K., and the U.S.—all characterized by a comparable institutional environment, robust financial markets, and mature ESG reporting practices. We then obtained data for measuring RMC, as well as firm- and industry-level variables, from both Eikon and Compustat, consistent with prior research (Angulo-Ruiz et al., 2018; Mishra & Modi, 2016; Morgan et al., 2009; Sun & Govind, 2022).

Finally, we gathered country-level data from the World Bank and the Heritage Foundation. After removing observations with missing data, we constructed an unbalanced panel of 855 firms from 2012 to 2021, yielding 6,188 firm-year observations. To mitigate the influence of outliers, we winsorized all variables at the 2nd and 98th percentiles.

4.2. Measurement of variables

4.2.1. Dependent variable: CSR specialization

We measured CSR specialization using the coefficient of variance (CV) of the ESG pillar scores (Fu et al., 2020). This measure captures the degree of dispersion in a firm's performance across the three ESG dimensions. First, we calculated a firm's CSR performance in each dimension, including the environmental, social, and governance pillar score for each year. Next, we calculated the standard deviation of the firm's CSR (environmental, social, and governance) pillar score. Finally, we used the standard deviation to divide the mean of the three pillar scores (Fu et al., 2020; Harrison & Klein, 2007). The formula for calculating CSR specialization is as follows:

$$CSR\ Specialization = \frac{\sqrt{\frac{(E_{it}-ESG_{\mu it})^2 + (S_{it}-ESG_{\mu it})^2 + (G_{it}-ESG_{\mu it})^2}{3}}}{ESG_{\mu it}} \quad (1)$$

where E_{it} , S_{it} , and G_{it} denote environmental pillar score, social pillar score, and governance pillar score, respectively, for firm i in year t . $ESG_{\mu it}$ is the average of three CSR dimensions in firm i in year t . The CSR specialization varies from 0 to $\sqrt{n-1}$. The lowercase of n represents the number of CSR activity categories; in this study, n equals 3. Therefore, the CSR specialization score ranges from 0 (indicating a balanced focus across all three CSR dimensions) to $\sqrt{3-1} \approx 1.41$ (indicating a highly specialized CSR focus). A higher CV

reflects greater dispersion among the three scores, meaning the firm concentrates its CSR efforts in one or two dominant areas (i.e., specialization). Conversely, a lower CV suggests a more balanced distribution of CSR performance across the E, S, and G dimensions (i.e., generalization). Thus, this measure captures how firms allocate their CSR efforts across different domains, reflecting either a narrow (specialized) or broad (generalized) approach.

4.2.2. Independent variable: relative marketing capability

Existing literature has proposed three ways of measuring RMC. First, RMC has been measured through a survey or interview with managers (Murray, Gao, & Kotabe, 2011; Ramaswami, Srivastava, & Bhargava, 2009), which suffers from managerial bias. Second, from the input or outcome perspective, RMC can be measured by marketing resources (e.g. advertising expense) or performance metrics (e.g. market share) (Brower & Mahajan, 2013). Finally, RMC can incorporate the view of operational capabilities by adopting a non-parametric method such as the DEA technique which is being increasingly employed by numerous scholars (Dutta et al., 1999; Morgan et al., 2009; Sun, Price, & Ding, 2019; Sun et al., 2021). DEA is a non-parametric linear programming tool to measure the relative capability of a firm by comparing it with other firms in the same industry (Cooper et al., 2011). Hence, this study adopts the most advanced technique (i.e., DEA) to measure RMC.

Compared to the traditional RMC measurement using input or output variables, DEA has several advantages when measuring a firm's RMC. First, DEA allows for using multiple input variables and multiple output variables simultaneously to calculate the firm's capability score (Angulo-Ruiz et al., 2018; Rahman et al., 2021). Second, DEA provides the relative capability score because it assesses the performance of each firm relative to others in the same sample. It builds a capability frontier, enabling firms to compare themselves with the

best performers (those located on the frontier) in the same industry (Andersen & Petersen, 1993; Hartman et al., 2001). A firm with a relatively higher RMC score means that the firm can utilize minimum marketing inputs to generate maximum marketing outputs compared to its competitors. Therefore, we used the cluster DEA model, which enables the best practice firms to be located on the best practice frontier (Angulo-Ruiz et al., 2018).

Given the nature of our data, which includes both cross-sectional and time-series observations, we adopted the DEA *windows* model to measure firms' RMC annually (Rahman et al., 2020). This approach accommodates temporal variation and enables dynamic efficiency assessment across multiple time periods. We used an input-oriented DEA model under the variable return-to-scale assumption, reflecting the realistic condition that firms exert greater control over marketing inputs than outputs (Rahman et al., 2020). However, a key limitation of the standard DEA model is its inability to effectively differentiate among firms that lie on the efficiency frontier, as many may be deemed equally efficient within a given cohort. To overcome this, we implemented the super-efficiency DEA model, which extends traditional DEA by allowing firms on the frontier to receive efficiency scores greater than 1, thereby enabling finer discrimination among top-performing firms (Andersen & Petersen, 1993; Tone, 2002; Zhu et al., 2020). This method ensures more accurate and meaningful comparisons of RMC levels across firms, even when multiple firms exhibit technically efficient performance (Hartman et al., 2001).

Concerning the specific components used to measure RMC, we adopted a set of marketing inputs and outputs based on prior studies (Healey & Mintz, 2021; Mishra & Modi, 2016; Patel et al., 2021; Sun, Ding, Xu, et al., 2020). The marketing inputs include: (1) marketing and promotional activities are operationalized as annual selling, general, and administrative (SG&A) expenditures, which encompass expenses such as advertising aimed at sustaining relationships with market-based stakeholders, including customers, trade

partners, and suppliers (Dutta et al., 1999; Sun et al., 2020); (2) relationship management efforts with market-facing stakeholders, measured by the dollar amount of annual accounts receivable, reflecting a firm's commitment to building and maintaining relationships with trade partners and other business-critical stakeholders (Dutta et al., 1999); and (3) installed customer base, proxied by lagged sales figures, indicating a firm's ability to build and maintain a strong customer base (Vorhies & Morgan, 2005). The marketing outputs comprise three indicators: sales revenue, sales growth, and profitability (Morgan et al., 2009; Sun et al., 2019; 2021).

4.2.3. Moderators: three dimensions of market conditions

We used a two-step procedure to measure market munificence—defined as the growth rate of the market—and market dynamism—defined as the volatility of the market (Han et al., 2017; Hartmann & Vachon, 2018). First, we regressed the natural logarithm of the total operating income (TOI) for four-digit SIC industries against a time index variable over a five-year period within the same industry (Han et al., 2017; Hartmann & Vachon, 2018). The antilog of the resulting regression coefficient was then used to estimate market munificence. The regression model is specified as:

$$\ln TOI_{it} = \beta_0 + \beta_i year + \varepsilon_{it} \quad (2)$$

where TOI_{it} denotes the average operation income in industry i in year t . β_i represents the industry-specific slope of growth (e.g., market munificence for the electronic device industry in 2020 was based on regressing the natural log of the TOI from 2017 to 2021). ε_{it} is the error term.

Second, market dynamism was measured as the antilog of the standard error of the regression slope, capturing the volatility of industry growth over time.

To measure market concentration, we employed the Herfindahl-Hirschman Index (HHI) (Flammer, 2015; Rahman et al., 2021), calculated as:

$$HHI = \sum_{i=0}^n X_i^2 \quad (3)$$

where X_i represents the market share of a firm i , and n is the total number of firms in the same industry. HHI values range from 0 to 1, with higher values indicating greater market concentration.

4.2.4. Control variables

We incorporated a comprehensive set of control variables at the firm, industry, and country levels, guided by previous literature (Table 2).

[Insert Table 2 about here]

Firm-level controls. Firm age can affect a firm's accumulated market knowledge and stakeholder expectations related to CSR. Older firms are more likely to have established routines and long-standing relationships with stakeholders, which shape their CSR strategies and responsiveness. They also benefit from embedded routines, slack resources, and structured learning processes (Kotha et al., 2011). Accordingly, we controlled for *firm age*, measured as the number of years since the firm's initial public offering (Sun et al., 2020). We also included *firm size* as a control variable. Larger firms tend to possess more resources to allocate to CSR activities (Arora et al., 2023), and their greater visibility subjects them to increased public expectations, often prompting more comprehensive CSR efforts (Rhee et al., 2021). Since firms with greater slack and stronger performance may enable a firm to

engage in discretionary initiatives like CSR, we controlled for *slack resources*, *ROA*, and *leverage* (Fu et al., 2020; Janani et al., 2022; Wang & Choi, 2013). Additionally, as R&D activities require significant investment and may compete with CSR for limited resources and managerial attention, we controlled for *R&D intensity* (Fu et al., 2020). Finally, firm governance structures also shape CSR strategies. For instance, CEO gender and background have been found to influence CSR orientation (Al-Shammari et al., 2024). Hence, we included governance-related controls such as *female on board*, *board size*, *CEO-chair duality* and *board-specific skills*.

Industry-level controls. Given our sample spans multiple industries, we incorporated industry-level variables to account for observable heterogeneity (Bouslah et al., 2022; Fu et al., 2020; Wang & Choi, 2013). These include *industry ROA* (industry net income divided by total industry assets), *industry ROA variability* (standard deviation of the prior three years' industry ROA), and *industry leverage* (industry long-term debt divided by total industry assets), all measured at the 4-digit SIC code level.

Country-level controls. As national institutional contexts influence CSR strategies (Fu et al., 2020; Graafland & Noorderhaven, 2020), we included country-level covariates. We controlled for the economic freedom index and relevant macroeconomic aggregates from the Heritage Foundation and the World Bank. First, *government tax burden* (taxes as a percentage of GDP) captures fiscal pressure. Higher tax burdens may incentivize firms to use CSR strategically to protect their reputation, maintain legitimacy, and manage political risk (Park et al., 2024). Second, *country investment freedom* (restrictions on capital movement) reflects regulatory constraints and access to external capital. Greater investment freedom can enhance firms' capacity to undertake long-term CSR initiatives (Shen & Zheng, 2024). Finally, we controlled for *GDP growth rate*, as stakeholders in wealthier countries (e.g., consumers, governments, NGOs) often have higher CSR expectations (Luo et al., 2017).

Unobserved time-invariant heterogeneities. Despite controlling for a wide range of firm-, industry-, and country-level variables, some unobservable time-invariant factors may influence the relationship between RMC and CSR specialization. To account for this, we included firm, industry, and country fixed effects to ensure robustness.

4.3. Empirical model

Our econometric model is as follows:

$$\begin{aligned}
 CSR\ Specialization_{it} = & \alpha + \beta_0 CSR\ Specialization_{it-1} + \beta_1 RMC_{it} \\
 & + \beta_2 Market\ Munificence_{jet} + \beta_3 Market\ Concentration_{jet} \\
 & + \beta_4 Market\ Dynamism_{jet} + \beta_5 Market\ Munificence_{jet} \times RMC_{it} \\
 & + \beta_6 Market\ Concentration_{jet} \times RMC_{it} \\
 & + \beta_7 Market\ Dynamism_{jet} \times RMC_{it} + \beta_8 \times Controls_{it} \\
 & + \varphi_j + \omega_e + \tau_t + \eta_i + \varepsilon_{it} \quad (4)
 \end{aligned}$$

where i and t denote the firm and the year, respectively, e denotes the industry, j denotes country, $\varphi_j, \omega_e, \tau_t$ denote country, industry and year fixed effect respectively, η_i denotes the firm-specific error term, and ε_{it} is the error term.

We employed a two-step system GMM estimation using the “xtabond2” command in Stata (Roodman, 2009) for several reasons. First, endogeneity bias may arise from reverse causality and omitted variables. CSR specialization can help a firm reduce internal resource trade-offs, thereby freeing up resources that enhance marketing strategies and, in turn, strengthen RMC, creating the possibility of reverse causality. Second, although this study incorporated a set of relevant control variables, unobserved factors, such as organizational

innovation culture, leadership orientation, and learning capability, may affect both CSR specialization and the independent variables. These firm-specific, time-invariant attributes are not directly observable. The system GMM method addresses this issue by removing firm-level fixed effects through differencing (Roodman, 2009). Third, CSR strategies often exhibit temporal persistence (Wang & Choi, 2013), suggesting that current CSR specialization may be influenced by prior-year strategies. This dynamic relationship justifies the use of an autoregressive specification with a lagged dependent variable. Finally, the estimator is robust to panel-specific heteroscedasticity and serial correlation in the error term (Duru et al., 2016; Roodman, 2009).

5. Results

5.1. Descriptive statistics

Table 3 presents descriptive statistics of the variables used in the analysis. CSR specialization ranges from 0.043 to 1.126, with a mean of 0.502. The average CSR specialization score for US firms is 0.612, compared to 0.372 for non-U.S. firms, suggesting that U.S. firms are more specialized in their CSR activities (Bouslah et al., 2022). Similarly, U.S. firms show slightly higher average RMC (1.071) than their non-U.S. counterparts (1.057). Regarding market conditions, the U.S. market appears less munificent than the non-U.S. market (1.079 vs 1.177), indicating that non-U.S. markets may offer relatively greater resource abundance. Market concentration is nearly identical across two samples, with the U.S. mean at 0.244. Market dynamism is marginally lower in the U.S. sample (1.181 vs. 1.270), indicating that U.S. markets may experience less turbulence and change.

[Insert Table 3 about here]

Table 4 reports the correlation matrix. The correlation between RMC and CSR specialization is positive but statistically insignificant. Although the bivariate relationship between the dependent and independent variables is not significant, it reflects only the interaction between two variables, without accounting for the influence of other interrelated variables in the model. Interestingly, market concentration, market dynamism, and market munificence each show a negative correlation with CSR specialization. Variance inflation factors (VIFs) range from 1.02 to 2.57, which confirms that multicollinearity is not an issue in the model.

[Insert Table 4 about here]

5.2. Main findings

Table 5 documents the results of the two-step system GMM estimation. The lagged value of the dependent variable is significant in all models, confirming the appropriateness of the system GMM technique for this study. Given the dynamic panel nature of the model, the sample size in Table 5 is smaller than that reported in the descriptive statistics (Table 3) (Li et al., 2023). This reduction arises from the use of internal instruments based on lagged variables, which require consecutive observations. Accordingly, firms with missing values or incomplete time-series data were excluded from the unbalanced panel.

[Insert Table 5 about here]

The first hypothesis (H1) predicted a positive relationship between RMC and CSR specialization. The results support this prediction: RMC is positively associated with CSR specialization in Model 1 ($\beta_1 = 0.090$, $p < 0.1$) and Model 5 ($\beta_1 = 0.027$, $p < 0.05$). To illustrate the effect size, Figure 2 presents the marginal effect of RMC on CSR specialization, indicating a positive relationship. Although Models 1 and 2 show that the effect of RMC on

CSR specialization is marginally positive ($p < 0.1$), Models 3 through 5, which includes moderators and controls, the relationship becomes statistically significant ($p < 0.05$). This suggests a more robust and reliable association when accounting for the broader market context.

[Insert Figure 2 about here]

The second hypothesis (H2) proposed that in less munificent markets, firms with higher RMC would show greater CSR specialization. This is also supported: the interaction term between RMC and market munificence is negative and significant in both Model 2 ($\beta_5 = -0.035, p < 0.1$) and Model 5 ($\beta_5 = -1.071, p < 0.05$). The third hypothesis (H3) predicted that in more concentrated markets, the positive effect of RMC on CSR specialization would be amplified. The interaction term between RMC and market concentration is positive and significant in Model 3 ($\beta_6 = 0.131, p < 0.1$) and Model 5 ($\beta_6 = 0.775, p < 0.05$), in support of H3. The last hypothesis (H4) predicted that the positive effect of RMC on CSR specialization would be stronger in more dynamic markets. This is confirmed by the positive and significant interaction term in Model 4 ($\beta_7 = 0.025, p < 0.1$) and Model 5 ($\beta_7 = 1.180, p < 0.05$).

Figure 3 illustrates the effect of RMC on CSR specialization (y-axis) across three types of market conditions (x-axis). Each panel is based on its corresponding single moderating model (Model 2-4, Table 5). Panel A demonstrates that as market munificence increases, the positive effect of RMC on CSR specialization weakens, consistent with H2. In contrast, Panel B and Panel C show that in markets characterized by higher concentration and greater dynamism, respectively, the effect of RMC on CSR specialization becomes stronger, providing support for H3 and H4. Collectively, these visualizations further reinforce our empirical findings and offer robust support for all four hypotheses.

[Insert Figure 3 about here]

5.3. Robustness checks

We conducted a battery of sensitivity analyses to assess the robustness of our results. Specifically, we divided the full sample into subsamples and evaluated the consistency of our findings using two different approaches. The first approach involved splitting the full sample into U.S. firms and non-U.S. firms, prompted by the significant mean difference in CSR specialization between these two groups (Table 3). Given that prior studies on CSR specialization have largely focused on publicly listed U.S. firms (Bouslah et al., 2022), our analysis aimed to validate the generalizability of our results across the U.S. and international contexts.

Table 6 presents the results of these robustness checks across four models. Models 6 and 7, which compare U.S. and non-U.S. firms respectively, show that the effect of RMC on CSR specialization remains marginally positive and statistically significant (Model 6: $\beta_1 = 0.081, p < 0.1$; Model 7: $\beta_1 = 0.040, p < 0.1$). The interaction between RMC and market munificence is negative in both subsamples (Model 6, $\beta_5 = -1.950, p < 0.1$; Model 7: $\beta_5 = -0.466, p < 0.05$), while the interactions between RMC and market concentration and between RMC and market dynamism are consistently positive and significant (Model 6: $\beta_6 = 1.745, p < 0.05, \beta_7 = 2.246, p < 0.05$; Model 7: $\beta_6 = 1.123, p < 0.1; \beta_7 = 1.050, p < 0.01$). These results confirm that the relationships between RMC, market conditions, and CSR specialization are stable across both geographic subsamples and the global sample.

[Insert Table 6 about here]

To ensure the robustness of our findings, we conducted three additional sets of robustness checks, and the results are detailed in Appendix A. First, we reran the models after

randomly excluding various firm-level and country-level control variables, and the results remained directionally consistent and statistically significant across all specifications (Table A1). Second, we employed alternative estimation using external instruments—country voice and accountability and economic freedom indices—to further address endogeneity concerns, and the main effects and interactions remained robust (Table A2). Third, we tested for higher-order and nonlinear effects by including interaction terms among market conditions and polynomial terms of the key independent variable (RMC) (Table A3). Across all models, the effect of RMC on CSR specialization remained positive and significant, and the interaction terms aligned with our hypotheses. These robustness checks confirm that our findings are not driven by specific control variables, model specifications, or nonlinear dynamics, underscoring the stability and reliability of our results.

6. General discussion

While prior research has emphasized the role of internal resources and external environments in shaping firms' CSR strategies, it has largely overlooked the dynamic influence of market-facing organizational capabilities (i.e., RMC) and how these capabilities interact with external market conditions to affect CSR specialization. Employing an extensive panel dataset of 855 firms across six countries over a decade and using advanced analytical techniques, we empirically demonstrate that RMC, a dynamic, efficiency-oriented, and externally focused capability, positively influences CSR specialization. Moreover, we find that the strength of this relationship is contingent on specific market conditions: it is amplified in less munificent, more concentrated, and more dynamic markets.

In contrast to prior studies that emphasize resources constraint pressures (e.g., financial slack resources, R&D intensity, human capital) or interdepartmental resource competition as key drivers of CSR specialization, our study reframes CSR specialization as a

proactive, capability-driven outcome enabled by a firm's RMC. These findings contribute to the literature at the intersection of strategic marketing and CSR by highlighting how dynamic marketing capabilities allow firms to tailor CSR focus in response to varying market environments. In doing so, this study offers actionable insights for firms navigating the trade-offs between CSR specialization and diversification in different environmental contexts.

6.1. Theoretical implications

Our research makes several important contributions to the relevant literature. First, we advance the understanding of why firms specialize in particular dimensions of CSR by shifting the theoretical lens from static resource possession to dynamic resource deployment. Prior research on CSR specialization has primarily focused on resource constraints or stakeholder salience, emphasizing what resources firms possess rather than how they dynamically utilize them (Bouslah et al., 2022; Brower & Mahajan, 2013; Mazutis, 2013). In contrast, we explore the role of RMC—a dynamic, efficiency-driven marketing capability—in driving CSR specialization. We argue that RMC satisfies the VRIN criteria (Barney et al., 2021): it is *valuable* due to its ability to enhance stakeholder targeting, *rare* as few firms consistently outperform competitors in market sensing, *inimitable* due to its path-dependent routines, and *non-substitutable* as no static marketing asset can replicate its dynamic function. This reframing addresses the mixed findings in prior literature regarding the impact of firm resources and capabilities on CSR specialization (Bouslah et al., 2022; Fu et al., 2020). Accordingly, our research contributes to both DC and R-A theories by offering a dynamic and relative perspective on the determinants of CSR specialization.

Second, we contribute to CSR and DC research by examining how market conditions moderate the relationship between RMC and CSR specialization. Whereas previous studies

have emphasized the direct influence of the external environment on CSR strategy and performance (Acabado et al., 2020; Skandera et al., 2023), we investigate how external contexts shape the effectiveness of internal capabilities. Specifically, we find that firms with higher RMC tend to intensify their CSR specialization in response to variations in market munificence, concentration, and dynamism. These findings underscore the importance of aligning internal capabilities with external environments, offering strategic insight into how capable firms adapt their CSR efforts under different market conditions (Angulo-Ruiz et al., 2018; Rahman et al., 2021).

Finally, we contribute to the marketing capability literature by introducing a novel, empirically grounded method for measuring RMC across multiple dimensions. Traditional RMC assessments have largely relied on subjective survey (Murray et al., 2011) or indirect proxies such as advertising spend or market share (Brower & Mahajan, 2013), which may fail to capture the nuanced, real-world deployment of marketing capabilities. In contrast, our DEA super-efficiency model simultaneously captures three critical aspects of RMC: (1) efficiency (optimal input-output usage), (2) relativity (comparison to industry peers), and (3) longitudinality (temporal responsiveness to environmental change). This multidimensional, objective approach addresses a key methodological gap and provides a more robust framework for evaluating firms' marketing capabilities based on firm-level data (Angulo-Ruiz et al., 2018; Rahman et al., 2021).

6.2. Managerial implications

The findings of this research offer actionable insights for firms developing and implementing CSR strategies. Managers should understand that CSR specialization is closely tied to a firm's marketing-related organizational capabilities (i.e., RMC). When a firm

consistently maintains a higher RMC than its competitors, it tends to focus its CSR efforts more strategically, leveraging its strengths to engage in specialized, targeted CSR initiatives.

For instance, firms with strong marketing sensing and integration capabilities are better equipped to detect emerging stakeholder expectations and social trends. This allows them to identify reputational opportunities and strategically align their CSR efforts with brand positioning. Rather than spreading resources thin across multiple CSR domains, these firms may choose to specialize in areas that resonate with their brand identity—such as environmental sustainability, employee well-being, or inclusive representation in advertising. Patagonia exemplifies this with its deep commitment to environmental sustainability, which has strengthened its brand loyalty and customer engagement (Else, 2023). Dove's 'Real Beauty' campaign aligns with its social-focused CSR, reinforcing consumer trust and emotional connection (Else, 2023). Similarly, Ben & Jerry's prioritization of social justice issues illustrates how specialization in CSR can become a defining brand asset, even at the expense of other CSR dimensions like governance (Benmelech, 2021).

Conversely, firms with lower RMC levels may diversify their CSR activities across several dimensions, potentially diluting strategic focus. For example, large conglomerates often pursue broad portfolios of CSR initiatives ranging from environmental stewardship and supply chain sustainability to health, hygiene, and gender equity programs. While such diversification allows them to appeal to diverse stakeholder groups, it may lack the sharp brand–CSR alignment observed in firms with stronger market sensing and integration capabilities. These examples suggest that CSR diversification, when not aligned with internal capabilities, can undermine competitive advantage, highlighting the need for firms to regularly assess their RMC, alongside other capabilities such as R&D or operations, to determine whether specialization or diversification offers the most effective strategic approach.

Moreover, managers should adopt a more dynamic and relative approach to evaluating RMC, focusing on the comparative efficiency of marketing inputs and outputs over time, not just absolute levels. Moreover, managers must take into account that external market conditions might shape CSR strategies. For example, in resource-scarce (less munificent) environments, focusing on a few CSR domains can conserve resources while still achieving impact. In contrast, highly competitive or fast-changing markets might reward firms that use strong RMC to specialize and differentiate themselves through CSR. Alternatively, in more munificent or stable markets, firms might benefit from broader CSR engagement. In sum, by aligning CSR strategy with both internal capabilities and external conditions, firms can make more informed, evidence-based decisions that enhance strategic positioning, and long-term competitiveness.

6.3. Limitations and future research agenda

While this research offers valuable theoretical and managerial insights, it is subject to several limitations. First, the empirical data are derived solely from developed countries, potentially limiting the generalizability of the findings to other business environments, such as those found in developing countries. Future studies could address this limitation by collecting data from a more diverse range of countries and investigating the role of RMC and market conditions in shaping CSR specialization within different contexts.

Second, our study examines the degree of CSR specialization rather than the specific type or content of such efforts. We define CSR specialization as concentrated engagement in one or a few domains, but we do not empirically differentiate among types of CSR focus (e.g., environmental, employee, governance). Prior research (Bouslah et al., 2022) indicates that firms vary in the domains in which they specialize. While our primary aim is to explain

why firms specialize rather than where they do so, future research could explore whether firms with high RMC are more likely to concentrate on reputationally salient or marketing-relevant CSR domains.

Third, this research focuses solely on RMC as an organizational capability, neglecting other organizational capabilities such as operational and R&D capabilities. Future studies could explore the interaction effects among multiple organizational capabilities to offer a more nuanced understanding of CSR specialization and its determinants. Addressing these limitations would contribute to a more robust understanding of CSR practices across various organizational contexts.

Fourth, this study does not consider other contingency factors that may impact the relationship between RMC and CSR specialization. For example, a firm's level of internationalization could affect CSR strategy, as multinational corporations often standardize policies for overseas operations, potentially affecting CSR specialization. Future research could investigate additional contingency factors to enhance the understanding of CSR specialization dynamics.

Finally, although our use of system GMM mitigates potential endogeneity and accounts for time-invariant unobservables, we acknowledge that time-varying unobservables, such as regulatory reforms or shifts in stakeholder activism, may still influence both RMC and CSR specialization, leaving residual concerns about simultaneity bias. Future research could more effectively address this limitation by employing quasi-experimental designs, such as the difference-in-differences approach to exploit exogenous shocks, or by combining secondary data with primary data to capture evolving stakeholder conditions.

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Table 1. Review of exemplary literature related to antecedents of CSR specialization.

Driver	Author	Theory	Method	Independent variable	Moderator	Dependent variable	Key finding
Internal resources	Al-Shammari et al. (2024)	Behavioral consistency theory and social role theory	Panel regression	Female CEO presence	Board gender diversity	CSR temporal and inter-domain consistency	Female CEOs promote CSR diversity, and gender-diverse boards strengthen the effect
	Bouslah et al. (2022)	Resource-based theory	Cluster analysis	Firm characteristics		CSR specialization	Smaller Firm size, less international activity, and less slack resources increase CSR specialization.
	Fu et al. (2020)	Knowledge-based view	Natural experiment	R&D intensity	Slack resources	CSR specialization	R&D intensity increases CSR specialization.
	Mazutis (2013)	Upper echelon theory	Linear mixed modeling	Open executive orientation	Institutional factors	Breadth and depth of CSR	Open executive orientation positively impacts the corporate social strategy (shallow and narrow CSR strategies).
	Lu et al. (2025)	Upper echelon theory and attention-based view	Panel regression & two side selection	CEO experience	Peer's CSR scope & CSR committee	CSR Scope	Generalist CEOs broaden CSR scope; the influence is weaker if board has sustainability committee or peers have broad CSR scope
	Park et al. (2024)	Upper echelon theory and human capital theory	Panel regression	CEO experience	Firm internationalization strategy	Diversified CSR portfolio ((Herfindahl index))	Generalist CEOs broaden CSR scope; the effect is stronger with higher franchising and internationalization.
External environment	Acabado et al. (2020)	Theory of competitiveness	Ordinary least squares	Market structure, firm size, regulatory and macroeconomic effects		Overall CSR and industry CSR disparity	Firm size and market concentration increase the firm overall CSR performance. Market competition increases the industry CSR disparity.
	Skandare et al. (2022)	Institutional theory	Hierarchical linear modelling	Market conditions		Normative and strategic CSR	Under an uncertain market environment, firms emphasize the strategic CSR.
	Flammer & Kacperczyk (2019)	Stakeholder theory	Natural experiment	Inevitable disclosure doctrine		CSR report	Inevitable disclosure doctrine increases the wide range of CSR report.
Stakeholder demand	Brower & Mahajan (2013)	Stakeholder theory	Panel regression	Characteristics of stakeholder landscape		Breath of corporate social performance (CSP)	Stakeholders need and demand sensitivity increase the CSP breadth (diverse a firm's CSR engagement).
	Rhee et al. (2021)	Stakeholder theory	Structure equation modelling	Stakeholder's pressure		Strategic CSR or responsive CSR	Stakeholder's priority and pressure have a positive impact on strategic CSR and responsive CSR.
Internal resources and external environment	This study	Resource-advantage theory and dynamic capabilities	System general method of moment (GMM)	Relative marketing capability	Market conditions	CSR specialization	Relative marketing capability increases CSR specialization, and its relationship varies depending on market conditions.

Table 2. Operationalization and sources of variables.

Type	Variable	Operationalization	Source
Dependent Variable	CSR specialization	Coefficient of variance of a firm's environment, social, governance (ESG) performance	Eikon
Independent Variable	Relative marketing capability	Measured using a super-efficiency DEA model (three input variables and three output variables)	
Moderating Variable	Market munificence	Two-step measurement procedure (see Section 3.2.3)	Compustat
Firm-level controls	Market concentration	Herfindahl-Hirschman Index (HHI)	Eikon & Compustat
	Market dynamism	Two-step measurement procedure (see Section 3.2.3)	
	1. Firm size	Natural logarithm of total assets	
	2. Firm age	Number of years since the firm's initial public offering (IPO)	
	3. Slack resources	Retained earnings divided by total assets	
	4. ROA	Net income divided by total assets	
	5. Leverage	Long-term debt divided by total assets	
	6. R&D intensity	Total R&D expenditure divided by total assets	
	7. Female on board	Percentage of female board members	
	8. Board size	Total number of board members	
Industry-level controls	9. CEO-chair duality	Whether the CEO simultaneously serves as a chair of the board	
	10. Board-specific skills	Percentage of board members who have either an industry specific background or a strong financial background	
	11. Industry ROA	Industry net income divided by total industry assets (4-digit SIC level)	
	12. Industry ROA variability	Standard deviation of industry ROA over the prior three years (4-digit SIC level)	
Country-level controls	13. Industry leverage	Total industry long-term debt divided by total industry total assets (4-digit SIC level)	World bank & Heritage Foundation
	14. Government tax burden	Total tax revenue as a percentage of gross domestic product (GDP)	
	15. Country investment freedom	Degree of restriction on the movement of capital	
	16. GDP growth rate		

Table 3. Descriptive statistics.

Variable	Total sample						US sample	Non-US sample
	Observations	Mean	SD	Min	Max	VIF	Mean	Mean
CSR specialization	6852	0.502	0.296	0.043	1.126		0.612	0.372
Relative marketing capability	6188	1.065	0.560	0.331	4.137		1.071	1.057
Market munificence	6841	1.124	0.521	0.000	1.958	2.35	1.079	1.177
Market concentration	6841	0.241	0.178	0.048	0.767	1.14	0.244	0.237
Market dynamism	6841	1.222	0.525	0.000	1.994	2.22	1.181	1.270
Firm age	6848	28.170	18.880	3.000	73.000	1.41	21.659	35.926
Female on board	6852	17.210	13.580	0.000	50.000	1.25	16.570	17.972
Board size	6852	8.867	2.823	4.000	17.000	1.92	8.174	9.694
CEO-chair duality	6852	0.403	0.491	0.000	1.000	1.02	0.517	0.267
Board-specific skills	6824	56.940	19.900	14.290	100.000	1.13	57.024	56.842
ROA	6577	-0.002	0.155	-0.609	0.227	1.75	-0.033	0.037
Debt to equity ratio	6592	1.423	2.261	-5.098	10.370	1.09	1.371	1.490
R&D intensity	5109	0.055	0.079	0.000	0.350	1.75	0.059	0.043
Slack resources	6424	0.015	0.095	-0.375	0.202	1.33	0.008	0.023
Industry ROA	6845	0.038	0.035	-0.053	0.141	1.23	0.035	0.040
Industry leverage	6845	0.119	0.085	0.017	0.381	1.17	0.114	0.125
Industry ROA variability	6845	0.016	0.014	0.002	0.075	1.23	0.017	0.016
Government tax burden	6641	67.690	7.435	47.600	76.800	1.52	71.547	63.316
Country investment freedom	6641	80.060	7.685	60.000	90.000	1.79	82.644	77.129
GDP growth annual	6641	1.652	3.113	-7.855	7.441	1.05	1.965	1.298
Firm size	6577	21.010	1.761	17.350	25.010	2.57	20.423	21.779

Table 4. Correlation matrix.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
(1) CSR specialization I																					
(2) Relative marketing capability	0.008	1																			
(3) Market munificence	-0.041***	-0.009	1																		
(4) Market concentration	-0.077***	0.056***	-0.018	1																	
(5) Market dynamism	-0.092***	0.014	0.729***	0.013	1																
(6) Firm age	-0.296***	0.01	0.082***	0.065***	0.106***	1															
(7) Female on board	-0.224***	-0.027**	-0.074***	0.003	-0.064***	-0.099***	1														
(8) Board size	-0.375***	-0.043***	0.02	0.067***	0.052***	0.337***	0.140***	1													
(9) CEO-chair duality	0.096***	0.043***	-0.025**	0.016	-0.013	-0.050***	0	0.052***	1												
(10) Board-specific skills	0.072***	-0.008	0.014	-0.008	0.006	0.098***	-0.245***	-0.102***	-0.003	1											
(11) ROA	-0.243***	0.085***	0.074***	0.054***	0.083***	0.245***	0.028**	0.134***	-0.016	0.035***	1										
(12) Debt to equity ratio	-0.133***	-0.031**	-0.004	-0.014	0.003	0.016	0.106***	0.148***	0.01	-0.049***	-0.007	1									
(13) R&D intensity	0.274***	-0.138***	0.021	-0.141***	-0.026*	-0.236***	-0.037***	-0.274***	-0.039***	0.016	-0.548***	-0.109***	1								
(14) Slack resources	-0.172***	0.038***	0.063***	0.037***	0.068***	0.155***	0.067***	0.132***	0.011	0.040***	0.423***	0.018	-0.319***	1							
(15) Industry ROA	-0.020*	-0.060***	0.217***	0.124***	0.134***	0.004	-0.047***	-0.046***	-0.014	-0.009	0.024*	-0.068***	0.057***	0.008	1						
(16) Industry leverage	-0.050***	0.050***	0.027**	-0.067***	0.086***	0.069***	0.037***	0.133***	-0.021*	-0.01	0.016	0.125***	-0.165***	-0.011	-0.290***	1					
(17) Industry ROA variability	0.006	0.060***	-0.277***	0.250***	-0.236***	-0.01	-0.025**	-0.019	0.036***	0.005	-0.004	-0.028**	-0.085***	0.008	-0.045***	0.046***	1				
(18) Government tax burden	0.287***	-0.002	-0.120***	-0.004	-0.101***	-0.141***	-0.220***	-0.278***	-0.012	0.195***	-0.198***	-0.085***	0.091***	-0.098***	0.001	-0.052***	0.033***	1			
(19) Country investment freedom	0.165***	0.02	-0.069***	-0.034***	-0.073***	-0.372***	0.161***	-0.404***	-0.131***	-0.050***	-0.124***	-0.024*	0.162***	-0.103***	-0.037***	-0.023*	-0.02	0.285***	1		
(20) GDP growth rate	0.041***	0	-0.012	0.01	-0.01	-0.090***	0.02	-0.091***	0.005	0.001	-0.051***	-0.006	0.011	-0.041***	0.145***	-0.016	0.043***	0.042***	0.115***	1	
(21) Firm size	-0.563***	-0.051***	0.052***	0.073***	0.087***	0.396***	0.167***	0.664***	0.015	-0.046***	0.335***	0.251***	-0.462***	0.277***	-0.016	0.191***	-0.004	-0.389***	-0.377***	-0.088***	1

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5. Regression results using two-step system GMM.

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Relative marketing capability	0.090* (0.048)	0.032* (0.019)	0.092** (0.039)	0.087** (0.036)	0.027** (0.012)
Market munificence		-0.072** (0.029)			-0.082** (0.033)
Market concentration			0.384* (0.233)		0.168** (0.077)
Market dynamism				0.028* (0.017)	0.052** (0.025)
Relative marketing capability × Market munificence		-0.035* (0.018)			-1.071** (0.528)
Relative marketing capability × Market concentration			0.131* (0.074)		0.775** (0.389)
Relative marketing capability × Market dynamism				0.025* (0.015)	1.180** (0.523)
CSR specialization (Lag 1)	0.681*** (0.111)	0.677*** (0.056)	0.699*** (0.064)	0.737*** (0.060)	0.776*** (0.033)
Firm age	-0.000 (0.002)	-0.001 (0.001)	-0.001 (0.002)	-0.001* (0.000)	0.001 (0.001)
Female on board	-0.001 (0.002)	0.001 (0.001)	-0.003 (0.002)	-0.001 (0.001)	-0.002** (0.001)
Board size	-0.002 (0.019)	-0.005 (0.006)	0.006 (0.014)	0.005 (0.009)	-0.001 (0.006)
CEO-chair duality	0.005 (0.050)	-0.053 (0.033)	0.010 (0.038)	-0.008 (0.021)	0.016 (0.020)
Board-specific skills	-0.001 (0.001)	0.001 (0.001)	-0.002** (0.001)	0.000 (0.001)	-0.000 (0.000)
ROA	-0.099 (0.266)	0.002 (0.113)	0.122 (0.183)	-0.150* (0.080)	0.019 (0.076)
Debt to equity ratio	-0.003	-0.002	-0.005	-0.009**	0.001

R&D intensity	(0.009) 0.962 (1.041)	(0.006) -0.187 (0.328)	(0.009) 0.278 (0.643)	(0.005) 0.054 (0.307)	(0.003) 0.445** (0.201)
Slack resources	-0.127 (0.231)	0.102 (0.122)	-0.002 (0.178)	0.079 (0.064)	-0.126* (0.067)
Industry ROA	0.158 (0.361)	0.060 (0.252)	-0.017 (0.572)	0.076 (0.388)	0.530** (0.261)
Industry leverage	0.042 (0.346)	0.528* (0.273)	0.804* (0.488)	0.279 (0.447)	0.405** (0.166)
Industry ROA variability	-1.857 (1.403)	-2.017** (0.984)	-1.796 (1.464)	-0.691 (1.246)	-2.542*** (0.642)
Government tax burden	-0.000 (0.003)	-0.003 (0.002)	-0.002 (0.002)	-0.004* (0.002)	-0.000 (0.001)
Country investment freedom	-0.001 (0.002)	0.000 (0.002)	0.001 (0.002)	0.000 (0.002)	-0.000 (0.001)
GDP growth rate	0.005 (0.008)	0.002 (0.003)	0.003 (0.004)	0.002 (0.003)	-0.001 (0.002)
Firm size	-0.016 (0.025)	-0.035*** (0.012)	-0.026 (0.019)	-0.018 (0.012)	-0.017* (0.009)
Constant	0.683 (0.541)	1.020** (0.514)	1.126*** (0.369)	0.528 (0.366)	0.382 (0.247)
Year fixed effects	yes	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes	yes
<i>Wald χ^2</i>	28028.406	8945.868	26131.809	28281.793	85204.035
<i>Number of instruments</i>	131	180	134	183	189
<i>AR (1) P value</i>	0.000	0.000	0.000	0.000	0.000
<i>AR (2) P value</i>	0.166	0.178	0.119	0.103	0.212
<i>Hansen J test P value</i>	0.880	0.935	0.954	0.964	0.861
<i>Firm-year observation</i>	3696	3693	3693	3693	3693

Note: Standard errors in brackets

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Robustness check.

	Model 6 (U.S. firm sample)	Model 7 (Non-U.S. firm sample)
Relative marketing capability	0.081* (0.045)	0.040* (0.024)
Market munificence	-0.127** (0.052)	-0.050** (0.022)
Market concentration	0.322* (0.194)	0.579** (0.226)
Market dynamism	0.137*** (0.053)	0.066*** (0.022)
Relative marketing capability × Market munificence	-1.950* (1.113)	-0.466** (0.226)
Relative marketing capability × Market concentration	1.745** (0.775)	1.123* (0.599)
Relative marketing capability × Market dynamism	2.246** (1.067)	1.050*** (0.383)
CSR specialization (Lag 1)	0.603*** (0.104)	0.700*** (0.075)
Firm age	0.002** (0.001)	-0.000 (0.001)
Female on board	-0.001 (0.002)	-0.002* (0.001)
Board size	-0.019* (0.011)	-0.004 (0.010)
CEO-chair duality	-0.012 (0.050)	0.028 (0.041)
Board-specific skills	-0.001 (0.001)	0.000 (0.001)
ROA	0.101 (0.160)	-0.106 (0.127)
Debt to equity ratio	0.005 (0.006)	0.006 (0.007)
R&D intensity	0.223 (0.575)	-0.346 (0.227)
Slack resources	0.049 (0.173)	0.064 (0.095)
Industry ROA	0.894** (0.384)	-0.051 (0.499)
Industry leverage	0.648 (0.414)	0.626** (0.289)
Industry ROA variability	0.424 (1.221)	-1.672 (1.629)
Government tax burden	-0.045 (0.042)	-0.002 (0.003)
Country investment freedom	0.022 (0.055)	0.001 (0.002)
GDP growth rate	-0.045 (0.084)	-0.000 (0.003)
Firm size	-0.033 (0.028)	-0.009 (0.016)
Constant	-5.087 (8.359)	0.018 (0.396)
Year fixed effects	yes	yes
Industry fixed effects	yes	yes
<i>Wald χ^2</i>	10198.936	1689.631
<i>Number of instruments</i>	152	151
<i>AR(1) P value</i>	0.000	0.000
<i>AR(2) P value</i>	0.660	0.386
<i>Hansen J test P value</i>	0.951	0.905
<i>Firm-year observation</i>	2649	1044

Note: Standard errors in brackets

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix A. Additional robustness analyses

To further validate the robustness of our findings, we conducted a series of supplementary analyses, including: (1) dropping firm- and country-level controls, (2) using external instruments to address endogeneity, (3) testing higher-order market condition interactions, and (4) assessing nonlinear effects on RMC.

Dropping control variables. We randomly omitted two to three firm- and/or country-level control variables across multiple model specifications. Table A1 presents the results: Model 8 excludes two firm-level controls (firm age and female on board), Model 9 drops two country-level controls (country tax burden and country investment freedom), and Model 10 simultaneously removes both firm- and country-level controls (board size, CEO chairman duality and country investment freedom). Across all models, the effect of RMC on CSR specialization remains positive and significant (Model 8: $\beta_1 = 0.029$, $p < 0.05$; Model 9: $\beta_1 = 0.034$, $p < 0.01$; Model 10: $\beta_1 = 0.025$, $p < 0.05$), supporting H1. The interaction between RMC and market munificence remains negative and significant in Models 9 and 11, and marginally significant in Model 9. The interactions between RMC and both market concentration and market dynamism are consistently positive and significant across all models, supporting H2, H3, and H4.

[Insert Table A1 about here]

We also computed that Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) to compare these models with the main model (Model 5: AIC = -847.79, BIC = -268.81). While Model 9 (AIC = -850.368, BIC = -284.25) and Model 10 (AIC = -848.8183, BIC = -289.1334) show similar AIC values, Model 8 (AIC = -827.0188, BIC = -260.824) performs slightly worse. These findings suggest that the main results are not sensitive to specific control variables and remain robust.

Addressing endogeneity with external instruments. To further address potential endogeneity bias, we supplemented our lagged internal instruments with external instruments: country voice and accountability, overall economic score, government integrity, and financial freedom. As shown in Table A1, Model 11 confirms the main findings—RMC remains positively and significantly associated with CSR specialization ($\beta_1 = 0.052, p < 0.05$), with a negative and significant interaction with market munificence ($\beta_5 = -0.358, p < 0.05$). The interaction terms for market concentration and dynamism remain positive and significant ($\beta_6 = 2.470, p < 0.01$; $\beta_7 = 0.753, p < 0.01$).

Interactions between market conditions. To test whether unmodeled higher-order interactions between market conditions might bias our results, we added interaction terms among market munificence, concentration, and dynamism. Table A2 presents results from Models 13 to 17, which incorporate these additional interaction controls.

[Insert Table A2 about here]

Across models, RMC retains its positive and significant effect on CSR specialization (Model 12: $\beta_1 = 0.116, p < 0.05$; Model 13: $\beta_1 = 0.036, p < 0.1$; Model 14: $\beta_1 = 0.255, p < 0.01$; Model 15: $\beta_1 = 0.187, p < 0.01$; Model 16: $\beta_1 = 0.033, p < 0.01$), supporting H1. The interaction between RMC and market munificence remains negative and significant (Model 13: $\beta_5 = -0.037, p < 0.05$; Model 16: $\beta_5 = -0.901, p < 0.01$), consistent with H2. Similarly, the interactions with market concentration and market dynamism remain positive and significant in the full specification (Model 16: $\beta_6 = 0.994, p < 0.01$; $\beta_7 = 1.096, p < 0.01$), reaffirming H3 and H4. AIC and BIC comparisons suggest only marginal improvements in fit (Model 16: AIC = -851.99 , BIC = -253.71), supporting the parsimony of the main model (Model 5: AIC = -847.79 , BIC = -268.81).

Nonlinear relationship testing. We tested for potential nonlinearities in the RMC–CSR specialization relationship by including squared and cubic terms of RMC in five model specifications (Models 17–22, Table A3). In all models, the linear term remains positive and statistically significant (e.g., Model 17: $\beta_1 = 0.308, p < 0.05$; Model 22: $\beta_1 = 0.255, p < 0.05$), while the squared and cubic terms are consistently insignificant ($p > 0.1$). This confirms a linear relationship between RMC and CSR specialization, rejecting any curvilinear pattern.

[Insert Table A3 about here]

The interaction terms between RMC and the three market conditions remain directionally consistent and statistically significant in these models, further strengthening support for H2, H3, and H4. For instance, in Model 22, the interactions are: market munificence ($\beta_5 = -0.549, p < 0.1$), market concentration ($\beta_6 = 0.735, p < 0.01$), and market dynamism ($\beta_7 = 0.699, p < 0.01$). AIC/BIC metrics for nonlinear models (e.g., Model 21: AIC = -858.34 , BIC = -272.92 ; Model 22: AIC = -861.82 , BIC = -269.96) are similar to the main model, suggesting these models do not offer significant improvements.

Table A1. Results when control variables are dropped.

	Model 8	Model 9	Model 10	Model 11
Relative marketing capability	0.029** (0.012)	0.034*** (0.013)	0.025** (0.012)	0.052** [0.025]
Market munificence	-0.099*** (0.035)	-0.087** (0.041)	-0.071** (0.036)	-0.055*** [0.021]
Market concentration	0.133* (0.079)	0.270*** (0.086)	0.191*** (0.070)	0.350* [0.202]
Market dynamism	0.063** (0.026)	0.051* (0.031)	0.048** (0.023)	0.048*** [0.014]
Relative marketing capability × Market munificence	-1.188** (0.540)	-1.048* (0.609)	-0.943** (0.391)	-0.358** [0.175]
Relative marketing capability × Market concentration	0.959** (0.379)	1.012** (0.476)	0.742** (0.341)	1.470*** [0.564]
Relative marketing capability × Market dynamism	1.338**	1.232** (0.607)	1.059*** (0.358)	0.753*** [0.265]
CSR specialization (Lag 1)	0.775*** (0.033)	0.778*** (0.035)	0.814*** (0.037)	0.479*** [0.069]
Firm age		0.001 (0.001)	0.001 (0.001)	-0.003** [0.001]
Female on board		-0.001 (0.001)	-0.002 (0.001)	-0.005*** [0.002]
Board size	-0.002 (0.006)	-0.002 (0.007)		0.007 [0.008]
CEO chairman duality	0.010 (0.022)	0.011 (0.020)		0.070* [0.040]
Board specific skills	0.000 (0.000)	0.000 (0.001)	0.001* (0.001)	0.000 [0.001]
ROA	0.014 (0.083)	0.016 (0.079)	0.085 (0.078)	0.025 [0.125]
Debt to equity ratio	-0.001 (0.003)	0.001 (0.003)	0.001 (0.004)	0.014*** [0.005]
R&D intensity	0.330* (0.190)	0.344* (0.209)	0.403* (0.207)	0.410 [0.383]

Slack resources	-0.087 (0.078)	-0.120 (0.079)	-0.246*** (0.081)	0.352** [0.149]
Industry ROA	0.563** (0.242)	0.543** (0.270)	0.491* (0.259)	0.301 [0.433]
Industry leverage	0.534*** (0.159)	0.434** (0.172)	0.253 (0.160)	0.824** [0.361]
Industry ROA variability	-2.728*** (0.683)	-2.855*** (0.701)	-2.254*** (0.658)	-2.285 [1.518]
Country tax burden	-0.001 (0.001)		-0.001 (0.001)	-0.002* [0.001]
Country investment freedom	0.000 (0.001)			-0.000 [0.001]
Country GDP growth annual	-0.002 (0.002)	0.001 (0.003)	-0.001 (0.002)	0.000 [0.002]
Firm size	-0.023*** (0.009)	-0.019* (0.010)	-0.014* (0.008)	-0.044** [0.018]
Constant	0.527** (0.242)	0.432* (0.247)	0.335 (0.244)	0.802 [0.519]
Year fixed effects	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes
<i>Wald χ^2</i>	94412.485	279825.786	125780.566	27431.088
<i>Number of instruments</i>	185.000	177.000	174.000	157.000
<i>AR (1) P value</i>	0.000	0.000	0.000	0.000
<i>AR (2) P value</i>	0.232	0.236	0.226	0.896
<i>Hansen J test P value</i>	0.830	0.781	0.985	0.936
<i>Firm-year observation</i>	3696.000	3693.000	3693.000	3693.000

Note: Standard errors in brackets.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A2. Results when market conditions are interacted.

	Model 12	Model 13	Model 14	Model 15	Model 16
Relative marketing capability	0.116** (0.056)	0.036* (0.021)	0.255*** (0.081)	0.187*** (0.063)	0.033*** (0.008)
Market munificence		-0.144** (0.071)			-0.048* (0.029)
Market concentration			1.837** (0.865)		0.145* (0.083)
Market dynamism				0.399*** (0.154)	0.057* (0.031)
Relative marketing capability × Market munificence		-0.037** (0.018)			-0.901*** (0.323)
Relative marketing capability × Market concentration			0.376* (0.224)		0.994*** (0.288)
Relative marketing capability × Market dynamism				0.024* (0.013)	1.096*** (0.277)
CSR specialization (Lag 1)	0.685*** (0.100)	0.659*** (0.056)	0.750*** (0.100)	0.713*** (0.093)	0.708*** (0.029)
Firm age	0.001 (0.001)	-0.001 (0.002)	-0.010 (0.009)	0.000 (0.004)	-0.001** (0.000)
Female on board	-0.003 (0.003)	0.001 (0.001)	-0.002 (0.010)	0.001 (0.003)	-0.000 (0.001)
Board size	-0.042 (0.028)	-0.006 (0.006)	-0.078 (0.078)	-0.024 (0.020)	0.002 (0.003)
CEO chairman duality	0.020 (0.056)	-0.047 (0.035)	-0.299 (0.250)	0.034 (0.068)	-0.000 (0.015)
Board specific skills	-0.000 (0.001)	0.000 (0.001)	-0.001 (0.003)	0.001 (0.001)	0.001** (0.000)
ROA	-0.018 (0.284)	0.006 (0.124)	0.723** (0.347)	-0.180 (0.234)	0.024 (0.048)
Debt to equity ratio	0.004 (0.010)	-0.002 (0.006)	0.032 (0.029)	-0.003 (0.003)	-0.001 (0.002)
R&D intensity	0.819 (0.731)	-0.211 (0.372)	1.818* (1.037)	0.228 (0.922)	0.370** (0.161)
Slack resources	-0.007	0.129	0.183	-0.559	-0.214***

	(0.226)	(0.125)	(0.669)	(0.388)	(0.065)
Industry ROA	-0.246	0.109	-3.322**	0.070	0.224**
	(0.347)	(0.280)	(1.461)	(0.302)	(0.112)
Industry leverage	-0.041	0.632**	1.444***	0.026	0.214**
	(0.346)	(0.270)	(0.415)	(0.292)	(0.096)
Industry ROA variability	-2.506	-2.496**	-0.482	-2.593*	-0.640
	(1.536)	(1.052)	(2.647)	(1.485)	(0.445)
Country tax burden	0.003	-0.004	0.001	-0.000	-0.000
	(0.004)	(0.002)	(0.005)	(0.004)	(0.001)
Country investment freedom	-0.003	0.001	-0.000	-0.000	-0.004***
	(0.003)	(0.002)	(0.004)	(0.004)	(0.001)
Country GDP growth annual	0.007	0.003	-0.005	0.007	-0.002
	(0.008)	(0.003)	(0.009)	(0.009)	(0.002)
Firm size	0.025	-0.039***	0.101*	0.016	-0.015**
	(0.035)	(0.013)	(0.055)	(0.031)	(0.006)
Market concentration × Market munificence	0.039	0.023	-0.832	0.709**	0.019
	(0.188)	(0.145)	(0.683)	(0.330)	(0.067)
Market concentration × Market dynamism	-0.026	0.100	-0.460	-0.639**	0.035
	(0.154)	(0.113)	(0.468)	(0.289)	(0.066)
Market munificence × Market dynamism	-0.053	0.016	0.120	-0.278***	-0.007
	(0.034)	(0.030)	(0.145)	(0.105)	(0.019)
Constant	-0.396	1.272**	0.884	-0.789	0.545***
	(0.912)	(0.558)	(0.753)	(0.770)	(0.195)
Year fixed effects	yes	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes	yes
<i>Wald χ^2</i>	43250.441	8900.574	913.513	38563.536	555979.316
Number of instruments	119.000	178.000	104.000	118.000	243.000
<i>AR (1) P value</i>	0.000	0.000	0.000	0.000	0.000
<i>AR (2) P value</i>	0.222	0.271	0.229	0.163	0.185
<i>Hansen J test P value</i>	0.959	0.942	0.998	0.916	0.865
<i>Firm-year observation</i>	3693.000	3693.000	3693.000	3693.000	3693.000

Note: Standard errors in brackets.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A3. Results when nonlinear relationship between RMC and CSR specialization is tested.

	(1) Model 17	(2) Model 18	(3) Model 19	(4) Model 20	(5) Model 21	(6) Model 22
Relative marketing capability	0.308** (0.156)	0.268** (0.136)	0.296** (0.145)	0.264** (0.131)	0.095** (0.048)	0.255** [0.127]
Square of relative marketing capability	-0.054 (0.034)	-0.048 (0.030)	-0.045 (0.030)	-0.035 (0.028)	-0.016 (0.010)	-0.125 [0.080]
Cubic of relative marketing capability						0.018 [0.013]
Market munificence		-0.057* (0.029)			-0.034* (0.020)	-0.044** [0.018]
Market concentration			0.270** (0.119)		0.151*** (0.054)	0.193*** [0.054]
Market dynamism				0.031* (0.017)	0.032* (0.017)	0.031** [0.015]
Relative marketing capability × Market munificence		-0.041* (0.024)			-0.638* (0.355)	-0.549* [0.316]
Relative marketing capability × Market concentration			0.214* (0.124)		0.729** (0.292)	0.735*** [0.273]
Relative marketing capability × Market dynamism				0.024* (0.013)	0.778*** (0.293)	0.699*** [0.267]
CSR specialization (Lag 1)	0.538*** (0.083)	0.620*** (0.061)	0.752*** (0.073)	0.738*** (0.056)	0.743*** (0.026)	0.711*** [0.025]
Firm age	0.000 (0.003)	-0.002 (0.002)	0.000 (0.003)	-0.001 (0.001)	-0.000 (0.000)	-0.001** [0.000]
Female on board	0.000 (0.002)	0.000 (0.001)	-0.006*** (0.002)	-0.002 (0.002)	-0.000 (0.001)	-0.001* [0.001]
Board size	0.001 (0.006)	-0.005 (0.006)	0.026** (0.012)	0.005 (0.009)	-0.003 (0.003)	-0.003 [0.003]
CEO chairman duality	0.011 (0.044)	-0.025 (0.037)	0.021 (0.043)	-0.032 (0.025)	0.026* (0.015)	0.035*** [0.014]
Board specific skills	0.001 (0.001)	0.001 (0.001)	0.000 (0.001)	0.001 (0.001)	0.000 (0.000)	0.001*** [0.000]
ROA	-0.127	0.007	0.183	-0.182**	0.004	0.019

	(0.167)	(0.133)	(0.131)	(0.092)	(0.045)	[0.044]
Debt to equity ratio	-0.010	-0.004	-0.014*	-0.005	-0.001	-0.002
	(0.008)	(0.007)	(0.008)	(0.004)	(0.002)	[0.002]
R&D intensity	0.581	0.373	0.649**	0.025	0.338**	0.332***
	(0.539)	(0.433)	(0.273)	(0.396)	(0.142)	[0.123]
Slack resources	0.140	0.303**	-0.275	0.132**	-0.024	-0.011
	(0.167)	(0.141)	(0.193)	(0.063)	(0.052)	[0.051]
Industry ROA	-0.368	0.005	0.022	0.470	0.339***	0.268**
	(0.585)	(0.496)	(0.707)	(0.336)	(0.122)	[0.115]
Industry leverage	0.953**	0.774***	0.216	0.702	0.332***	0.486***
	(0.460)	(0.289)	(0.303)	(0.493)	(0.109)	[0.103]
Industry ROA variability	-1.673	-2.031*	-0.907	-1.386	-1.497***	-1.819***
	(1.110)	(1.108)	(1.008)	(1.409)	(0.377)	[0.346]
Country tax burden	-0.004*	-0.005*	-0.001	-0.008***	0.000	0.000
	(0.002)	(0.003)	(0.002)	(0.003)	(0.001)	[0.001]
Country investment freedom	0.002	0.002	0.002	0.002	-0.001	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	[0.001]
Country GDP growth annual	0.003	0.001	-0.006	0.001	-0.004**	-0.005***
	(0.004)	(0.003)	(0.006)	(0.003)	(0.002)	[0.002]
Firm size	-0.061***	-0.052***	-0.007	-0.021	-0.017***	-0.025***
	(0.022)	(0.016)	(0.018)	(0.014)	(0.005)	[0.005]
Constant	0.838	1.477**	-0.061	0.619	0.459***	0.530***
	(0.689)	(0.601)	(0.469)	(0.441)	(0.154)	[0.176]
Year fixed effects	yes	yes	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes	yes	yes
<i>Wald χ^2</i>	6160.312	13225.232	31558.988	180582.164	376531.947	560927.931
<i>Number of instruments</i>	147.000	167.000	126.000	147.000	233.000	249.000
<i>AR (1) P value</i>	0.000	0.000	0.000	0.000	0.000	0.000
<i>AR (2) P value</i>	0.304	0.216	0.310	0.128	0.153	0.216
<i>Hansen J test P value</i>	0.905	0.947	0.995	0.975	0.843	0.839
<i>Firm-year observation</i>	3696.000	3693.000	3693.000	3693.000	3693.000	3693.000

Note: Standard errors in brackets.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$