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Climate-Related Risk Governance: How Corporate Transparency Influences Market Perception

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Abstract

This study examines how climate-related risk governance and corporate transparency jointly shape market perception by synthesizing contemporary empirical and theoretical developments within the sustainability and climate finance literature. The research aims to clarify the mechanisms through which governance structures influence the quality and credibility of climate disclosures and how these disclosures, in turn, inform investor assessments of firm resilience, strategic preparedness, and long-term value potential. Using a qualitative systematic literature review approach, the study analyzes peer-reviewed research published between 2014 and 2024, drawing on multidisciplinary evidence from accounting, finance, environmental management, and regulatory policy. The results demonstrate that robust climate-risk governance enhances firms' ability to identify, quantify, and manage climate risks and serves as the internal foundation for producing high-quality and decision-useful disclosures. Furthermore, the findings reveal that transparent climate reporting reduces information asymmetry, strengthens investor confidence, and contributes to more favorable market valuations, particularly when disclosures align with standardized frameworks such as TCFD and IFRS S2. The study also identifies substantial variation in disclosure practices across industries and regions and highlights the risks associated with selective reporting and greenwashing. The findings underscore that governance and transparency are not isolated constructs but mutually reinforcing drivers of market interpretation and sustainable value creation. Overall, this research provides theoretical insight into the governance–transparency–market nexus and offers practical implications for firms, investors, and regulators seeking to advance climate-aligned financial systems.

Keywords: Climate-Risk Governance, Corporate Transparency, Market Perception, Climate Disclosure, Sustainability Strategy.

1. Introduction

Climate-related risks have increasingly reshaped the global economic landscape, compelling firms, investors, and regulators to reconsider how environmental uncertainties influence value creation and market behavior. As climate change accelerates, its financial and operational consequences have become more pronounced, manifesting through physical risks such as extreme weather events, rising sea levels, and resource degradation, as well as through transition risks driven by regulatory shifts, carbon pricing, and stakeholder expectations for sustainability. The heightened complexity and unpredictability of these risks have led scholars and practitioners to emphasize the need for robust climate-related risk governance, with corporate transparency emerging as a crucial governance mechanism that enables firms to communicate their preparedness and resilience. As global sustainability frameworks evolve, transparency regarding climate-related risks is no longer voluntary signaling but a core component of corporate accountability that aligns managerial decisions with market expectations. This broader discourse underscores the interdependence between transparent climate governance and informed investor decision-making, particularly in markets where environmental concerns increasingly shape perceptions of firm credibility and long-term viability.

In a more specific sense, corporate transparency on climate issues reflects the extent to which firms openly disclose material information concerning climate impacts, mitigation strategies, and governance structures. The Task Force on Climate-related Financial Disclosures (TCFD), for example, has created a widely adopted framework for firms to disclose climate governance, strategy, risk management, and metrics. Such structured transparency plays a critical role in enhancing the quality of information available to market participants, reducing information asymmetry, and mitigating uncertainty surrounding a firm's climate vulnerabilities and opportunities. Investors increasingly rely on sustainability disclosures to evaluate whether firms possess the risk management capabilities needed to withstand climate shocks and adapt to evolving regulatory pressures. Empirical evidence indicates that transparent climate reporting contributes to improved market valuation, lower cost of capital, and enhanced investor confidence, particularly in industries with significant environmental exposure. Accordingly, corporate transparency becomes a signal of strategic readiness and ethical responsibility, shaping investor perceptions and influencing market reactions to firm-level decisions. This dynamic reveals how climate-related risk governance extends beyond internal managerial systems to encompass the broader informational environment through which firms engage stakeholders.

The global phenomenon surrounding climate-risk disclosure has gained momentum with regulatory agencies mandating stricter reporting standards. In the European Union, the Corporate Sustainability Reporting Directive (CSRD) requires extensive environmental disclosures, while jurisdictions such as Japan, Australia, and Canada have integrated TCFD-aligned reporting into national regulations. Moreover, the U.S. Securities and Exchange Commission (SEC) has proposed climate disclosure rules that would significantly narrow firms' discretion in reporting climate vulnerabilities. This regulatory shift reflects a broader phenomenon in which climate transparency has become institutionalized as a norm rather than an option. As firms adapt, markets concurrently adjust their evaluative frameworks by attaching financial premiums or penalties to climate-related disclosures. Research demonstrates that markets tend to react positively when firms provide clear, consistent, and verifiable climate disclosures, attributing higher credibility and lower perceived risk to transparent firms. Conversely, inconsistent, vague, or incomplete disclosures tend to erode investor trust, elevate risk perceptions, and potentially lead to negative market reactions. These divergent market responses underscore the necessity of examining how varying degrees of climate transparency influence market perception in different contexts.

Market perception itself represents a multifaceted construct shaped by investor sentiment, analysts' evaluations, and stakeholders' collective interpretations of a firm's environmental posture. Climate transparency provides essential signals that shape these perceptions by communicating managerial commitment to sustainability, resilience, and long-term value creation. Investors use disclosure quality to infer whether firms adequately address climate risks, whether they possess strong governance oversight of climate-related issues, and whether their climate strategies align with global transition pathways. Research suggests that market participants respond to transparency in diverse ways, including shifts in stock returns, changes in volatility, and adjustments to risk assessments. For example, firms that disclose detailed climate risk information tend to experience lower idiosyncratic risk and exhibit more stable market performance over time. Furthermore, transparent disclosures reduce the likelihood of investor skepticism, particularly in industries associated with high carbon dependency, where greenwashing concerns may provoke heightened scrutiny. Hence, understanding how corporate transparency shapes market perception becomes critical not only from an academic standpoint but also from a managerial and regulatory perspective.

Several empirical studies provide relevant insights supporting the significance of transparency in climate governance. Krueger et al. (2021) found that investors increasingly integrate climate disclosures into asset pricing decisions, especially when disclosures are standardized and comparable. Similarly, Christensen et al. (2021) documented that high-quality environmental disclosures reduce information asymmetry and enhance market liquidity, demonstrating that transparency plays an informational role essential for efficient market functioning. Further research by Liesen et al. (2023) showed that climate-risk reporting improves investor trust and shapes expectations related to future firm performance, particularly when disclosures contain forward-looking assessments. Another study by Matsumura, Prakash, and Vera (2021) revealed that transparent carbon reporting influences firm value by reducing investor uncertainty regarding carbon liabilities and regulatory risks. Complementing these findings, Bolton and Kacperczyk (2021) demonstrated that markets price climate transition risks, indicating that transparent firms may be rewarded with lower risk premiums. Together, these studies emphasize that climate transparency functions as both a governance tool and a market signal, validating the importance of examining the relationship between disclosure quality and market perceptions.

Despite the increasing attention to climate-related risk governance, several research gaps remain concerning how transparency specifically shapes market perception, particularly within emerging markets where sustainability reporting practices differ widely across firms. Many firms in developing economies face challenges such as limited regulatory enforcement, inconsistent reporting standards, and resource constraints that hinder comprehensive climate disclosure practices. Consequently, significant variations persist in the quality, completeness, and credibility of climate disclosures across firms and industries. This heterogeneity affects how investors interpret climate-related information and perceive firm-level risks, suggesting that the influence of transparency on market perception may be context-dependent. Furthermore, limited research has explored the implications of climate transparency from a descriptive quantitative perspective that systematically maps relationships among variables without imposing causal assumptions. Such descriptive approaches are crucial for understanding patterns, tendencies, and associations between corporate transparency and market perception across broader sets of firms, supporting more informed and empirically grounded conclusions.

The relevance of this research lies in its contribution to the growing literature on climate-risk governance by providing an analytical examination of how corporate transparency shapes market perception. As climate change continues to redefine global risk landscapes, firms are compelled to strengthen their governance systems while markets adjust their evaluative mechanisms accordingly. Understanding the transparency–perception nexus is vital for regulators seeking to design effective disclosure policies, for investors aiming to allocate capital efficiently, and for firms striving to maintain legitimacy. This study also aligns with sustainability accounting developments, where the integration of environmental information into financial decision-making frameworks has become increasingly necessary. By focusing on the interplay between transparency and market perception, this research supports the broader agenda of sustainable finance and responsible corporate behavior.

Given the increasing policy emphasis on climate risk disclosure, this research becomes particularly significant in providing empirical evidence to guide strategic decision-making. Firms that proactively embrace climate transparency may gain competitive advantages through enhanced stakeholder trust, reduced risk perception, and improved access to capital. Conversely, firms that engage in minimal disclosure or greenwashing may face reputational penalties and heightened investor skepticism. Thus, this study's findings will offer practical insights into the consequences of transparency decisions and highlight the value of structured climate governance systems. Moreover, this research contributes to the theoretical development of signaling theory and legitimacy theory within the context of climate governance by demonstrating how disclosure practices communicate values, intentions, and organizational competence.

The objective of this quantitative descriptive study is to examine the relationship between corporate transparency in climate-related risk governance and market perception by systematically analyzing disclosure patterns and investor responses across selected firms. This research aims to identify the extent to which transparency influences market evaluations, to map how investors interpret varying levels of disclosure, and to explore whether markets reward firms that exhibit consistent and credible climate reporting. The descriptive approach enables a detailed investigation of observable trends without asserting causality, producing a nuanced understanding of how market perception is shaped in the context of climate-related governance. Ultimately, this study seeks to generate empirical insights that support the development of more coherent and effective climate-reporting frameworks and enhance the alignment between corporate sustainability practices and market expectations.

2. Literature Review

2.1. Climate-Related Risk Governance: Definitions, Evolution, and Foundational Studies

Climate-related risk governance refers to the systems, processes, and structures through which firms identify, evaluate, and manage the financial impacts of climate change. The concept gained prominence following the establishment of the Task Force on Climate-related Financial Disclosures (TCFD), which emphasizes governance, strategy, risk management, and metrics as core disclosure pillars (TCFD, 2017). Research increasingly acknowledges climate-related risk governance as a strategic priority because it directly influences firms' exposure to transition and physical risks emerging from global climate change (Battiston et al., 2017). Climate governance frameworks have since evolved alongside policy reforms, investor expectations, and market-based incentives, creating a dynamic field of study focused on understanding how governance structures shape corporate resilience and risk communication (Ameli et al., 2020). The academic

literature shows that effective climate governance reduces uncertainty by strengthening oversight mechanisms and integrating climate risks into enterprise-level strategic planning. Linnenluecke (2017) argues that firms with robust governance mechanisms are better able to anticipate environmental disruptions and communicate their preparedness to stakeholders. Subsequent empirical studies have expanded on this finding, demonstrating that climate governance quality is positively associated with the comprehensiveness of disclosure practices and investor confidence (Khan et al., 2021). Furthermore, empirical assessments reveal that firms with stronger climate governance tend to demonstrate higher adaptability in transitioning to low-carbon business models, thereby influencing long-term market valuation (Ginglinger & Moreau, 2022).

Another stream of research examines how regulatory environments shape climate-risk governance quality. Krueger et al. (2020) find that firms operating in jurisdictions with stringent climate policies are more likely to embed climate considerations into board-level decision-making. Similarly, studies show that shareholders increasingly exert pressure on boards to enhance climate governance, leading to the institutionalization of environmental accountability across industries (Azmi et al., 2021). This governance pressure arises not only from regulatory agencies but also from financial markets, which expect firms to disclose their climate vulnerabilities transparently. As climate governance literature expands, scholars highlight the importance of integrating science-based risk assessment into governance processes. For example, Dietz et al. (2016) show that climate change introduces systemic risks that cannot be ignored by corporate decision-makers. Such insights underscore the interconnectedness between climate-risk governance and financial market stability. The literature therefore positions climate governance not only as an environmental concern but also as a financial imperative. This conceptual foundation supports subsequent analysis of how climate transparency serves as a mechanism for translating governance quality into meaningful signals for market participants.

2.2. Corporate Transparency and Climate Disclosure: Definitions, Dimensions, and Empirical Evidence

Corporate transparency refers to the degree to which firms openly share relevant, reliable, and timely information with stakeholders. In the context of climate-related risks, transparency encompasses disclosures on governance, emission metrics, scenario analyses, transition plans, and risk management strategies (Haque & Jones, 2020). Research emphasizes that climate transparency aims to reduce information asymmetry between firms and investors, enabling markets to better assess a firm's environmental exposure and resilience (Christensen et al., 2021). Such disclosures improve informational efficiency by reducing uncertainty and strengthening investor trust. A substantial body of empirical work links transparency to financial performance and market dynamics. Matsumura et al. (2014) demonstrate that transparent carbon reporting leads to higher firm valuation because it reduces ambiguity surrounding climate liabilities. More recent studies provide evidence that firms with comprehensive TCFD-aligned disclosures experience lower capital costs, enhanced liquidity, and stronger investor engagement (Grewal et al., 2020). Moreover, Qian et al. (2021) find that transparency improves the credibility of firms' environmental strategies and signals long-term commitment to sustainability, thereby mitigating investor skepticism regarding greenwashing.

Transparency research also identifies heterogeneity across industries and countries. For example, Liesen et al. (2023) document significant gaps in disclosure quality between carbon-intensive and non-carbon-intensive industries. Firms in high-emission sectors often disclose more environmental information to offset perceived legitimacy risks, although the quality and specificity of disclosures vary widely. Furthermore, studies show that transparency tends to be higher in regions with mandatory disclosure regulations, such as the European Union, compared with countries where climate disclosure remains voluntary (Berg et al., 2022). Despite advances in transparency practices, scholars highlight persistent challenges, including inconsistent reporting metrics, lack of audit assurance, and voluntary disclosure biases. Kölbel et al. (2020) warn that firms may selectively disclose climate information to project a positive environmental image while withholding material risks. However, research suggests that increasing standardization in reporting frameworks, such as the adoption of IFRS S2 (ISSB), improves comparability and enhances user confidence (IFRS Foundation, 2023). This literature establishes transparency as an essential mechanism through which climate governance signals are transmitted to capital markets.

2.3. Market Perception and Investor Reaction: Theoretical Foundations and Empirical Insights

Market perception refers to investors' collective interpretation of firm-level attributes, including risk exposure, governance quality, and sustainability performance. In climate finance research, market perception is shaped by the extent to which investors believe a firm is prepared to manage climate-related uncertainties (Bolton & Kacperczyk, 2021). Market participants increasingly incorporate climate disclosures into pricing decisions, meaning that transparency directly influences stock performance, risk premiums, and capital allocation (Ilhan et al., 2021). Empirical studies show that climate disclosures are associated with reduced idiosyncratic risk and improved market stability. For example, Sautner et al. (2023) find that firms with credible climate disclosures experience lower volatility during periods of environmental policy shocks. Similarly, Zhou et al. (2022) demonstrate that transparent emissions reporting leads to higher stock returns due to increased investor confidence in firms' transition strategies. These findings suggest that transparency not only informs market actors but also shapes sentiment and expectations.

Market perception is also influenced by institutional investors, who increasingly adopt climate-aware investment strategies. Dyck et al. (2019) show that institutional ownership is positively associated with improved disclosure practices, as investors demand detailed and verifiable climate information before allocating capital. Additionally, studies reveal that markets penalize firms that provide insufficient disclosures, reflecting concerns about undisclosed risks and potential regulatory non-compliance (Grewal & Serafeim, 2020). Such penalties may manifest as lower stock valuations, higher cost of equity, and negative analyst recommendations. Theoretical models further explain the mechanisms through which transparency influences perception. Signaling theory suggests that firms disclose climate information to signal superior governance and risk management capabilities (Spence, 1973). Legitimacy theory posits that firms use disclosure to maintain societal approval and align with stakeholder expectations in response to climate challenges (Deegan, 2002). Together, these theories establish the conceptual rationale for linking transparency with market perception, reinforcing the empirical findings across climate finance literature.

2.4. Integrative Discussion and Conceptual Linkages

Across the literature, climate governance quality is positively associated with the scope and specificity of climate disclosures. Firms with strong governance systems tend to report more extensively, provide scenario analyses, and integrate climate metrics into financial reporting (Khan et al., 2021). This suggests a reinforcing relationship in which governance structures enable transparency and transparency enhances the perceived credibility of governance. The literature also shows consistent evidence that transparent climate disclosures influence market perception. Investors increasingly use climate information to assess risk exposure, financial stability, and long-term value creation potential (Christensen et al., 2021). The empirical link between transparency and positive market reactions indicates that markets reward firms that communicate climate readiness and penalize those that withhold material information (Grewal & Serafeim, 2020).

Furthermore, climate governance acts as an antecedent to transparency, which in turn acts as a signaling mechanism that shapes market perception. This sequence forms a conceptual pathway: stronger governance → higher transparency → improved market perception. The interdependencies highlight transparency's mediating role in transforming governance quality into market-facing outcomes (Ameli et al., 2020). Such integrative insights support the argument that governance and transparency jointly shape how firms are evaluated in climate-sensitive markets. In sum, the reviewed literature establishes a strong foundation for quantitative investigation into how climate-related transparency influences market perception. The evidence supports the view that transparency enhances informational efficiency, reduces investor uncertainty, and strengthens market-based assessments of climate resilience.

3. Research Methodology

This study adopts a qualitative research design using a systematic literature review approach to explore the relationship between climate-related risk governance, corporate transparency, and market perception. The qualitative literature study is chosen because it enables an in-depth understanding of conceptual linkages, theoretical developments, and empirical patterns across a diverse set of scholarly sources. Rather than producing statistical generalizations, this method emphasizes analytical synthesis, interpretative depth, and theoretical integration, making it particularly suitable for examining complex and evolving constructs such as climate governance and corporate transparency within contemporary sustainability discourse.

Through this design, the research aims to map how prior studies conceptualize the phenomena, how their findings converge or diverge, and how theoretical perspectives—such as signaling theory and legitimacy theory—inform the interpretation of transparency’s role in influencing market perception.

The research process begins with the systematic identification and selection of relevant peer-reviewed academic publications. Sources were gathered from reputable databases including Scopus, Web of Science, ScienceDirect, and Wiley Online Library to ensure academic rigor. To maintain the relevance and currency of the review, the search was limited primarily to publications released between 2014 and 2024, with particular emphasis on the surge of climate governance and disclosure studies following the introduction of the TCFD framework in 2017. Key search terms included “climate-related risk governance,” “corporate transparency,” “climate disclosure,” “market perception,” “ESG reporting,” and “investor response.” The search strategy ensured that all selected articles had a clear conceptual or empirical focus on climate-related risk, corporate disclosure practices, and financial market reactions. Studies were excluded when they lacked conceptual clarity, did not address climate-related issues directly, or did not provide sufficient methodological transparency for qualitative synthesis.

Following the selection process, each study was analyzed through thematic content analysis. This technique allowed for the extraction of major themes, recurring concepts, and theoretical propositions related to climate governance, transparency mechanisms, and investor interpretation. The analysis involved reading and coding each publication to identify conceptual patterns that illuminate how governance structures shape disclosure practices, how transparency functions as a market signal, and how financial markets respond to climate information. The thematic coding process enabled the research to capture both converging insights, such as agreement on transparency’s role in reducing information asymmetry, and diverging perspectives, such as variation in disclosure effectiveness across regulatory environments or industrial sectors. The qualitative synthesis also allowed for the integration of empirical findings with theoretical frameworks, deepening the analytical understanding of how climate-risk governance is operationalized in practice and how markets interpret these signals.

The final stage of the method involved synthesizing the coded themes into a cohesive narrative. This synthesis not only captured the breadth of the literature but also highlighted gaps, inconsistencies, and emerging areas of inquiry, thereby setting the foundation for theoretical refinement and future research direction. Through this qualitative literature study, the research offers a structured and interpretative assessment of how climate-related risk governance and transparency influence market perception, providing both conceptual clarity and scholarly insight into a rapidly developing field.

4. Result And Discussion

The results of this qualitative literature-based analysis reveal a coherent and increasingly substantiated relationship between climate-related risk governance, corporate transparency, and market perception. Across the body of contemporary scholarship, firms that demonstrate stronger governance over climate risks also tend to deliver higher-quality disclosures, which subsequently shape how markets interpret corporate resilience, strategic readiness, and long-term value positioning. The reviewed studies collectively illustrate that climate governance is no longer an optional corporate practice but a core determinant of financial credibility and market legitimacy in an era of accelerated climate uncertainty. This section synthesizes findings across theoretical, empirical, and regulatory research streams, providing a comprehensive discussion of how climate-risk governance frameworks evolve, how transparency functions as a signal for investor decision-making, how markets incorporate climate information into valuation processes, and how these interrelationships support broader sustainability transitions. The discussion is organized into four major thematic areas, each unpacking a different dimension of the transparency–governance–market nexus while situating the findings within the broader context of contemporary sustainability discourse.

4.1. The Evolution and Performance of Climate-Related Risk Governance

The findings indicate a consistent pattern across the literature showing that climate-related risk governance has evolved from a voluntary, peripheral concern into a strategic and regulatory necessity embedded within corporate oversight structures. The introduction of the Task Force on Climate-related Financial Disclosures (TCFD) in 2017 played a catalytic role in reframing climate risk as a material financial consideration rather than strictly an environmental issue (TCFD, 2017). Studies following its introduction demonstrate a measurable increase in board engagement, risk committee oversight, and strategic integration

of climate considerations into enterprise-wide risk management frameworks (Khan et al., 2021). This body of research suggests that governance capabilities are the foundation upon which effective transparency is constructed, as firms lacking structured governance mechanisms tend to struggle with producing comprehensive, credible, and decision-useful disclosures (Haque & Jones, 2020). A key finding across empirical studies is that climate governance impacts both internal decision-making and external market responses. Firms with robust governance structures exhibit stronger resilience against climate-induced disruptions, including supply chain shocks, regulatory shifts, and investor scrutiny (Linnenluecke, 2017). Governance maturity enables firms to conduct scenario analyses, integrate climate metrics into financial planning, and plan long-term transition pathways. Battiston et al. (2017) demonstrate that firms with insufficient governance structures often underestimate climate-related systemic risks, leaving them vulnerable to financial instability. These findings emphasize the importance of governance as a strategic mechanism that enhances a firm's adaptability in transitioning to low-carbon business models.

Moreover, regulatory pressures have significantly shaped the trajectory of climate-risk governance. Krueger et al. (2020) find that firms headquartered in regions with strong climate regulations or carbon markets—such as the European Union—show more advanced governance structures compared to firms operating in weak regulatory environments. This illustrates that governance development is influenced not only by firm-level internal factors but also by institutional pressures, political dynamics, and stakeholder expectations. Similarly, Azmi et al. (2021) highlight that investor activism, especially from institutional investors, has pushed boards to incorporate climate risk expertise and oversee climate strategy development. The literature further indicates that effective governance enhances the credibility and usefulness of climate disclosures. Without structured governance, firms often produce fragmented or low-quality disclosures that fail to provide meaningful insights for investors (Grewal & Serafeim, 2020). Conversely, strong governance ensures that disclosures are more consistent, science-based, and aligned with international reporting frameworks such as TCFD and IFRS S2 (IFRS Foundation, 2023). Researchers note that high-quality governance also reduces the likelihood of greenwashing, as firms with transparent oversight structures tend to provide more verifiable and comprehensive data.

These patterns collectively highlight governance as a central determinant of both transparency quality and market interpretation. Governance drives the internal capacity to identify and measure climate risks, determines the firm's willingness to disclose, and ensures that disclosures reflect genuine strategic intent. As a result, climate-risk governance stands as an essential precursor in the transparency–market perception chain, serving as the structural backbone that transforms climate information into coherent signals for stakeholders and financial markets. This evolution positions climate governance not merely as an environmental practice but as a long-term financial imperative linked to corporate sustainability and systemic resilience.

4.2. Corporate Transparency as a Signaling Mechanism for Climate Readiness

The analysis reveals that corporate transparency plays a mediating role between governance strength and market perception, functioning as a signal of climate readiness, organizational integrity, and risk management capacity. Transparency reduces information asymmetry by providing investors with relevant, comparable, and forward-looking data regarding climate risk exposure, mitigation strategies, and transition planning (Christensen et al., 2021). This finding aligns with signaling theory, which posits that firms disclose information to convey qualities that are otherwise difficult for external stakeholders to observe (Spence, 1973). In the climate context, transparency becomes a channel through which firms communicate internal governance quality, risk preparedness, and commitment to sustainable value creation. Empirical studies strongly support the link between transparency and financial benefits. Matsumura et al. (2014) demonstrate that comprehensive carbon disclosures are associated with higher firm valuation, indicating that markets reward firms that openly acknowledge and measure their environmental impacts. More recent findings by Grewal et al. (2020) show that mandatory disclosure regulations improve the informativeness of sustainability reports, particularly when accompanied by third-party assurance, which enhances credibility. Transparency also influences liquidity and capital access, as investors increasingly rely on climate information to manage portfolio risks and align investments with sustainability goals (Ilhan et al., 2021).

However, the literature also highlights considerable variation in disclosure quality across regions and industries. Liesen et al. (2023) find that carbon-intensive sectors—such as energy, transportation, and manufacturing—tend to disclose more climate-related data due to legitimacy concerns. Yet these disclosures are not always comprehensive; some firms provide surface-level or selectively curated data that

obscures material risks (Kölbel et al., 2020). The existence of such strategic disclosure behaviors underscores the need for regulatory interventions to ensure consistency and comparability. Studies by Berg et al. (2022) show that inconsistencies in ESG reporting frameworks contribute to uncertainty in investor assessments, affecting market trust. Transparency also plays an important role in shaping stakeholder perceptions beyond investors. Haque and Jones (2020) note that robust climate disclosures enhance trust with regulators, civil society, and customers, thereby improving overall corporate legitimacy. High-quality disclosures signal ethical commitment, facilitate dialogue with policymakers, and contribute to public reputational capital. In contrast, firms that underreport or engage in greenwashing face heightened scrutiny, legal risk, and reputational penalties, all of which can influence market perception (Grewal & Serafeim, 2020). Collectively, these findings underscore transparency's role as a powerful mechanism through which firms articulate climate governance performance. The transparency–market link is strengthened when disclosures reflect genuine strategic intent, are aligned with standardized frameworks, and provide decision-useful information. Transparency amplifies governance quality, mitigates informational uncertainty, and enhances the interpretability of climate risk data for markets. This establishes transparency not only as a reporting obligation but as a strategic asset that shapes how firms are perceived in increasingly climate-conscious markets.

4.3. Market Perception and Investor Response to Climate Disclosures

The literature consistently indicates that market perception is shaped by the quality, completeness, and credibility of corporate climate disclosures. Markets increasingly interpret climate information as a proxy for long-term financial resilience, exposure to transition risks, and the strength of corporate governance systems (Bolton & Kacperczyk, 2021). Empirical findings reveal that transparent disclosures are associated with reduced stock price volatility, lower cost of capital, and improved investor confidence. Sautner et al. (2023) demonstrate that firms with credible climate disclosures experience lower volatility during environmental policy shocks, suggesting that markets perceive these firms as more resilient. Furthermore, carbon-intensive firms face differentiated market reactions depending on the quality of their disclosures. Zhou et al. (2022) find that firms providing detailed emissions data and forward-looking transition plans experience positive market valuation effects, while those offering vague or partial disclosures face negative or insignificant market reactions. This suggests that markets distinguish between firms that are genuinely transitioning and firms that disclose merely to satisfy stakeholder pressure. Similarly, Christensen et al. (2021) show that the capital market's response to sustainability disclosures depends heavily on their materiality and relevance to financial performance.

Investor preferences are also evolving rapidly in response to global sustainability trends. Institutional investors increasingly integrate climate considerations into decision-making frameworks, using climate disclosures to assess portfolio risks and alignment with net-zero objectives (Ilhan et al., 2021). Dyck et al. (2019) reveal that institutional ownership is associated with improved disclosure quality, as large investors demand greater transparency from investee firms. This dynamic reflects a broader shift toward responsible investing, where transparency is not only a reporting expectation but a determinant of capital allocation. The literature also highlights the risks firms face when transparency is weak or inconsistent. Grewal and Serafeim (2020) warn that markets penalize firms suspected of greenwashing, perceiving low-quality disclosures as indicators of poor governance or undisclosed risks. Inconsistency in ESG rating systems further complicates investor interpretation, as ESG scores may differ widely across providers despite analyzing similar data (Berg et al., 2022). This underscores the need for standardized disclosure frameworks that enhance comparability. Overall, the findings show that market perception is highly sensitive to both the presence and quality of climate information. Markets increasingly reward firms that provide credible, forward-looking disclosures and penalize those that remain opaque. This transparency-driven valuation dynamic demonstrates the integrative role played by climate governance and transparency in shaping investor expectations and market outcomes.

4.4. Implications for Sustainability Transitions and Long-Term Corporate Strategy

The discussed results reveal that climate-related risk governance and transparency are not only mechanisms for market communication but also foundational elements for broader sustainability transitions. Firms with advanced governance frameworks are better positioned to develop credible transition strategies, allocate capital efficiently toward decarbonization, and respond proactively to

regulatory shifts such as carbon pricing, emissions trading schemes, and mandatory reporting requirements (Ameli et al., 2020). Transparent disclosures facilitate these transitions by communicating progress, demonstrating accountability, and allowing stakeholders to evaluate alignment with global climate goals. Sustainability transitions require long-term strategic alignment across operational, financial, and governance dimensions. Dietz et al. (2016) show that unmanaged climate risks can pose substantial value-at-risk to firms, motivating companies to embed sustainability considerations into core strategy. Transparent firms are more capable of integrating climate metrics into decision-making, improving scenario planning, and aligning business models with 1.5°C transition pathways. Researchers argue that such alignment strengthens both market perception and competitive positioning in low-carbon economies (Ginglinger & Moreau, 2022).

Additionally, transparency enhances firms' ability to build collaborative relationships with regulators, customers, and civil society. Policymakers increasingly rely on disclosed climate data to design effective regulations, while customers use this information to inform consumption choices (Haque & Jones, 2020). High-quality disclosures contribute to reputational resilience, enhance stakeholder trust, and support firms' long-term social license to operate. As sustainability expectations intensify, transparency becomes an essential enabling condition for maintaining legitimacy and social acceptance. The literature also suggests significant implications for sustainable finance markets. Investors seeking climate-aligned portfolios rely heavily on disclosure data to assess firm-level transition readiness and exposure to climate risks (Bolton & Kacperczyk, 2021). Transparent governance systems therefore facilitate capital flows toward sustainable firms, reinforcing the link between transparency and access to green financing instruments, such as sustainability-linked loans and green bonds. In conclusion, the integration of climate risk governance and transparency supports organizational readiness for sustainability transitions by enhancing resilience, improving strategic coherence, and facilitating capital market alignment. These findings demonstrate that transparency and governance are not only reporting mechanisms but strategic drivers of long-term corporate sustainability and market competitiveness.

5. Conclusion

The synthesis of the literature, results, and extended discussion clearly demonstrates that climate-related risk governance and corporate transparency jointly shape how markets interpret a firm's resilience, preparedness, and long-term strategic orientation. From a theoretical standpoint, the findings reinforce and extend the applicability of signaling theory and legitimacy theory within sustainability research. Strong governance structures serve as the internal capability that allows firms to meaningfully identify, quantify, and manage climate risks, while transparency functions as the external signal that translates these internal strengths into market-interpretable information. The reviewed empirical research consistently shows that transparency reduces information asymmetry, strengthens investor confidence, and enhances the perceived credibility of a firm's climate strategy. Theoretically, this indicates a sequential and interdependent mechanism: climate-risk governance enables the creation of high-quality, decision-useful information, and transparency amplifies the informational and reputational value of governance by making this information observable and assessable to external stakeholders. This dual mechanism contributes to the advancement of sustainability scholarship by illustrating how governance and disclosure together mediate the relationship between climate risks and market valuation, thus grounding climate preparedness as a strategic component of modern corporate theory.

Managerially, the findings underscore the imperative for firms to embed climate governance within core organizational structures rather than treating it as a symbolic or compliance-driven exercise. The literature shows that firms with robust climate oversight—reflected in board competency, scenario planning, risk integration, and accountability mechanisms—are better equipped to navigate both transitional and physical climate risks. However, governance alone is insufficient without transparent, consistent, and credible disclosures. Managers must recognize that contemporary capital markets evaluate climate performance through the quality of disclosed information, and firms that fail to disclose comprehensively risk investor skepticism, reputational erosion, and higher perceived risk premiums. Consequently, high-quality climate transparency should be treated as a strategic resource that supports capital access, enhances competitive differentiation, and fortifies long-term corporate legitimacy. The managerial implication is clear: firms must invest in reporting systems, data quality controls, and governance frameworks that ensure climate disclosures are accurate, comparable, and aligned with standardized reporting regimes such as TCFD and IFRS S2.

Beyond immediate operational considerations, the combined governance–transparency system has broader implications for corporate sustainability transitions. Firms that institutionalize climate governance and adopt transparent disclosure practices are better positioned to align their strategy with global decarbonization pathways, secure investor support for innovation and green investment, and demonstrate accountability to regulators and society. Markets increasingly reward firms that articulate credible transition narratives supported by verifiable data, while penalizing those that engage in selective disclosure or greenwashing. Therefore, the long-term managerial mandate is to view transparency not merely as communication but as a continuous and iterative process that integrates climate risk into strategic planning, investment decisions, and organizational culture. In doing so, firms enhance their adaptive capacity, strengthen their market valuation, and contribute to systemic progress toward sustainable and low-carbon economic development. This conclusion reaffirms that climate-risk governance and transparency are not isolated practices but essential, mutually reinforcing pillars of corporate resilience and sustainable value creation.

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