

How Financial Flexibility Shapes ESG Integration Along the Supply Chain: A Theoretical Perspective

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Abstract

Environmental, social, and governance considerations have increasingly evolved from firm-level concerns into supply chain-wide challenges that require sustained coordination across organizational boundaries. Although prior research has examined governance mechanisms and institutional pressures driving ESG integration along supply chains, the financial conditions that enable firms to sustain such commitments remain under-theorized. Limited attention has been paid to how firms manage the intertemporal and interorganizational costs associated with ESG implementation under uncertainty. Drawing on insights from corporate finance, strategic management, and supply chain sustainability research, this study develops a theoretical framework that conceptualizes financial flexibility as a strategic enabler of ESG integration along the supply chain. The framework identifies three interrelated mechanisms through which financial flexibility shapes ESG integration: intertemporal investment smoothing, enhanced interfirm coordination through co-investment and risk sharing, and resilience under conditions of disruption. It further highlights governance alignment as a boundary condition influencing these effects. By integrating financial flexibility into ESG-oriented supply chain research, the study advances a process-based understanding of sustainability governance and offers a foundation for future empirical inquiry.

Keywords

Financial Flexibility; ESG Integration; Sustainability Governance; Strategic Finance.

1. Introduction

Over the past decade, supply chains have moved from being largely operational systems toward becoming central arenas where firms confront environmental, social, and governance challenges [1,2]. Climate shocks, labor controversies, and geopolitical disruptions have exposed how deeply sustainability risks are embedded across interfirm networks rather than confined within focal firms. As a result, ESG considerations are increasingly framed as supply chain issues that require coordination across multiple organizational boundaries rather than isolated corporate initiatives [3,4]. This shift has elevated the strategic importance of how firms mobilize resources to support sustainability commitments beyond their own organizational scope.

While prior research has shown that ESG engagement can enhance legitimacy, risk management, and long-term value creation, it also emphasizes that sustainability initiatives often impose substantial short-term financial demands. Implementing ESG standards across suppliers typically requires upfront investments in monitoring systems, process redesign, supplier development, and contingency buffers. These demands are particularly salient in supply chains characterized by uncertainty and power asymmetries, where focal firms may need to absorb costs that are not immediately recoverable [5,6]. This tension raises a

fundamental but underexplored question regarding which financial conditions enable firms to sustain ESG commitments across supply chains without undermining strategic flexibility.

Financial flexibility, broadly understood as a firm's capacity to access and reallocate financial resources in response to changing conditions, offers a promising lens through which to address this question. Existing finance research highlights financial flexibility as a buffer against shocks and a facilitator of strategic investment under uncertainty, particularly when firms face volatile environments or constrained capital markets [7,8]. From a strategic perspective, flexible financial structures allow managers to delay irreversible commitments, absorb temporary inefficiencies, and reconfigure resource allocation as conditions evolve [9,10]. Yet despite its relevance, financial flexibility has rarely been theorized as a mechanism that shapes ESG implementation at the supply chain level.

The ESG and supply chain literature has largely focused on governance mechanisms such as codes of conduct, relational contracting, and stakeholder pressure to explain sustainability diffusion across networks. Studies emphasize the role of buyer power, institutional pressures, and relational trust in motivating suppliers to adopt environmental and social standards [11,12]. However, these explanations often treat financial capacity as a background condition rather than an active strategic resource. As a result, existing frameworks offer limited insight into why some firms can sustain ESG-oriented supply chain initiatives over time, while others retreat when economic conditions tighten or disruptions occur.

Integrating financial flexibility into ESG-oriented supply chain research allows for a more dynamic understanding of sustainability governance. Financial flexibility can enable firms to smooth the intertemporal trade-offs inherent in ESG investments [13,14], support suppliers during periods of adjustment, and maintain continuity in sustainability programs when short-term financial performance is under pressure. From a resource-based view, such flexibility constitutes a strategic asset that enhances a firm's ability to deploy ESG practices in ways that competitors with rigid financial structures cannot easily replicate [15]. At the same time, excessive rigidity in financial policies may constrain ESG ambitions by forcing firms to prioritize immediate liquidity preservation over long-term supply chain transformation.

Despite these theoretical connections, the literature lacks an integrative framework that explains how financial flexibility conditions the relationship between ESG strategy and supply chain sustainability. Prior studies tend to examine ESG performance, financial policy, or supply chain resilience in isolation, leaving their interaction conceptually fragmented. This gap is particularly problematic considering recent global disruptions, which have underscored the need for firms to simultaneously manage sustainability objectives and financial resilience across interconnected supply networks [16]. Without a clear theoretical articulation of how financial flexibility operates within ESG-oriented supply chains, both scholars and practitioners face limited guidance in designing coherent sustainability strategies under uncertainty.

This study addresses this gap by developing a conceptual framework that positions financial flexibility as a strategic enabler of ESG-oriented supply chains. Rather than treating flexibility as a static financial outcome, the framework conceptualizes it as an active governance mechanism that shapes how ESG commitments are financed, coordinated, and sustained across supply chain partners. By articulating the mechanisms through which financial flexibility influences ESG integration, supplier relationships, and supply chain resilience, the study contributes to a more nuanced understanding of sustainability as an interorganizational and financially embedded process.

The contributions of this study are threefold. First, it extends ESG research by shifting attention from firm-level outcomes to the financial conditions that support ESG diffusion across supply chains. Second, it advances supply chain sustainability theory by integrating insights from corporate finance, thereby highlighting the role of financial resource reconfiguration in

sustaining ESG practices under uncertainty. Third, it offers a coherent conceptual foundation for future empirical research by clarifying testable mechanisms and boundary conditions linking financial flexibility, ESG strategy, and supply chain governance.

The paper proceeds as follows. Section 2 synthesizes prior research on ESG strategies and supply chain sustainability, with particular attention to the limits of governance-centered explanations. Section 3 discusses financial flexibility from the perspectives of corporate finance and strategic management, clarifying its strategic role under conditions of uncertainty. Building on these insights, Section 4 presents an integrative conceptual framework that situates financial flexibility as a central enabler of ESG-oriented coordination along the supply chain. Section 5 discusses the underlying mechanisms through which financial flexibility shapes ESG implementation and enhances supply chain resilience. Section 6 concludes by outlining managerial implications for firms seeking to align financial policies with long-term ESG objectives across supply chains.

2. Literature Review

2.1. ESG Integration in Supply Chains

Research on ESG has increasingly moved beyond firm level performance to consider how environmental, social, and governance practices are implemented across supply chains [17,18]. Early studies emphasized that sustainability outcomes are shaped by interorganizational relationships rather than isolated firm actions, particularly when production and sourcing activities are geographically dispersed [19]. From this perspective, ESG integration requires coordination mechanisms that extend environmental and social standards to upstream and downstream partners.

Subsequent research has highlighted governance mechanisms as central drivers of ESG diffusion along supply chains. Buyer driven codes of conduct, auditing systems, and contractual safeguards are frequently identified as tools through which focal firms attempt to align suppliers with sustainability expectations [20]. These mechanisms rely heavily on relational power and institutional pressure, suggesting that ESG integration is often achieved through compliance based rather than collaborative processes. However, this stream of work tends to underplay the resource commitments required to sustain such governance arrangements over time.

More recent studies have begun to recognize the dynamic and costly nature of ESG integration. Implementing sustainability standards often requires investments in supplier development, information systems, and monitoring infrastructures that generate benefits only in the long run [21]. These investments expose firms to short term financial strain, especially during periods of demand volatility or supply chain disruption. As a result, ESG integration is increasingly viewed as a strategic process that unfolds over time rather than a static compliance outcome.

Despite these advances, the ESG supply chain literature remains fragmented in its treatment of financial conditions. While scholars acknowledge that sustainability initiatives entail costs, financial capacity is typically treated as an exogenous constraint rather than an endogenous strategic factor shaping ESG integration trajectories. Table 1 summarizes key strands of ESG oriented supply chain research and highlights the limited attention paid to financial resource flexibility in existing frameworks.

Table 1. Core research streams on ESG integration in supply chains

Research stream	Core focus	Key arguments	Representative studies	Limitations
Interorganizational sustainability perspective	ESG implementation across interfirm networks	Sustainability outcomes are shaped by interorganizational relationships rather than isolated firm actions, especially in geographically dispersed supply chains	An et al. (2026); Bag et al. (2025); Yu et al. (2025); Liu & Shang (2026); Tian & Ye (2026)	Focuses on relational structures but pays limited attention to firms' financial conditions enabling sustained ESG coordination
Governance and compliance mechanisms	Formal governance tools for ESG diffusion	Buyer-driven codes of conduct, audits, and contractual safeguards are primary mechanisms for aligning suppliers with ESG standards	Zhang & Zhang (2025)	Emphasizes compliance and institutional pressure while underestimating the long-term resource commitments required
Dynamic ESG integration process	ESG as a long-term strategic process	ESG integration involves ongoing investments in supplier development, information systems, and monitoring infrastructure with delayed returns	Du & Chen (2025)	Acknowledges cost intensity but treats financial capacity as an exogenous constraint
Financial conditions in ESG integration	Cost and resource implications of ESG practices	ESG initiatives impose short-term financial strain, particularly under demand volatility and supply chain disruptions	Du & Chen (2025); Bag et al. (2025)	Lacks a conceptualization of financial flexibility as an endogenous strategic factor shaping ESG trajectories

2.2. Financial Flexibility as a Strategic Resource

Financial flexibility has long been recognized in the finance and strategy literature as a firm's ability to mobilize and reallocate financial resources in response to uncertainty. Chen et al. argues that flexible financial structures allow firms to preserve investment capacity when external financing becomes costly or unavailable. This perspective positions financial flexibility as a buffer against shocks rather than a passive balance sheet outcome.

Strategic management research further conceptualizes financial flexibility as a dynamic capability that enables firms to delay commitments, absorb temporary inefficiencies, and reconfigure resource allocation under uncertainty [22]. Firms with greater flexibility can pursue long term strategic investments even when short term performance pressures intensify [23]. This logic has been applied to contexts such as innovation investment, mergers, and international expansion, where financial slack supports strategic experimentation.

Within sustainability research, financial flexibility has primarily been examined at the firm level, often in relation to ESG performance or environmental investment decisions. Some studies

suggest that financially flexible firms are better positioned to invest in environmental technologies and absorb the risks associated with sustainability initiatives [24]. Others caution that excessive slack may reduce managerial discipline, potentially weakening the effectiveness of ESG engagement when governance structures are weak [25]. These contrasting views indicate that the strategic role of financial flexibility is contingent on how it is deployed rather than its mere presence.

Notably absent from this literature is a systematic examination of how financial flexibility operates in interorganizational settings. Supply chains introduce additional layers of coordination, cost sharing, and risk transfer that fundamentally alter the strategic use of financial resources. Table 2 reviews key perspectives on financial flexibility and identifies opportunities to extend this concept from firm level analysis to supply chain sustainability contexts.

Table 2. Financial flexibility in corporate finance and strategic management research

Theoretical lens	How financial flexibility is conceptualized	Typical research context	Core insights	Implications for ESG supply chains
Corporate finance perspective	Capacity to preserve investment ability under financing constraints	Capital market frictions, liquidity shortages	Financial flexibility buffers firms against shocks and maintains access to investment opportunities when external financing tightens	Explains why some firms can sustain ESG-related investments during periods of financial stress
Strategic management perspective	Dynamic capability enabling resource reallocation under uncertainty	Innovation investment, mergers, international expansion	Financial flexibility supports long-term strategic initiatives despite short-term performance pressure	Suggests that ESG integration can be treated as a strategic investment requiring adaptive financial capacity
Sustainability investment perspective	Financial capacity to absorb risks from environmental and social initiatives	Firm-level ESG performance and environmental technologies	Financially flexible firms are more willing and able to invest in sustainability initiatives with uncertain returns	Indicates that financial flexibility may enable early-stage ESG adoption but does not explain interfirm coordination
Agency and governance perspective	Financial slack as a potential source of managerial discretion	Corporate governance and managerial behavior	Excessive flexibility may weaken discipline and reduce the effectiveness of strategic initiatives	Highlights the need for governance alignment when deploying flexibility for ESG integration
Emerging research gap	Lack of interorganizational perspective	Supply chains and networked production systems	Existing studies focus on firm-level outcomes and overlook coordination, cost sharing, and risk transfer across firms	Points to the need to reconceptualize financial flexibility as a mechanism shaping ESG integration along supply chains

2.3. Linking Financial Flexibility, ESG, and Supply Chain Governance

Bringing together ESG integration and financial flexibility highlights a critical but underdeveloped theoretical intersection. Supply chain sustainability requires sustained investments that are often difficult to justify under rigid financial policies focused on short term liquidity preservation. Without sufficient flexibility, firms may scale back ESG commitments when faced with economic downturns or supply disruptions, undermining long term sustainability objectives [26].

From a governance perspective, financial flexibility can shape how ESG responsibilities are distributed and enforced across supply chains [27]. Flexible firms may be better able to support suppliers through co investment, risk sharing arrangements, or transitional financing during ESG implementation [28]. Such mechanisms move beyond coercive compliance and foster more collaborative forms of sustainability governance, consistent with relational and resource based views of the firm [29].

At the same time, the absence of an integrative framework has limited theoretical progress in this area. Existing studies often examine ESG governance, financial policy, or supply chain resilience in isolation, leaving their interaction conceptually under specified. As a result, it remains unclear under what conditions financial flexibility enhances ESG integration rather than simply buffering firms from accountability. Table 3 synthesizes prior work at the intersection of ESG, financial resources, and supply chain governance, illustrating the need for a unified theoretical perspective.

By addressing this gap, the present study positions financial flexibility as a strategic enabler that conditions how ESG practices are financed, coordinated, and sustained across supply chains. This integrative view provides a foundation for the conceptual framework developed in the next section.

Table 3. Conceptual linkages between financial flexibility, ESG strategy, and supply chain governance

Analytical focus	What existing studies explain	What remains under-specified	Implications for this study
Sustainability investment continuity	ESG integration requires long-term investments and faces interruptions under economic stress (Ramos et al., 2025; Zhou & Zhao, 2024)	Financial policies are treated as rigid constraints rather than adaptive strategic tools	Reframe financial flexibility as a mechanism enabling intertemporal smoothing of ESG investments
Governance of ESG responsibilities	ESG diffusion relies on buyer power, compliance mechanisms, and institutional pressure (Bag et al., 2025)	Limited attention to how financial capacity shapes the distribution and enforcement of ESG responsibilities	Introduce financial flexibility as a determinant of collaborative versus coercive ESG governance
Interfirm coordination mechanisms	Supplier support through co-investment and risk sharing can facilitate ESG adoption (Fan et al., 2025)	These practices are discussed descriptively without an integrating financial logic	Conceptualize financial flexibility as enabling co-investment and transitional financing across supply chains
Accountability versus buffering effects	Financial resources may shield firms from short-term pressure	Conditions under which flexibility strengthens ESG integration versus weakens accountability remain unclear	Identify governance alignment as a boundary condition for effective use of financial flexibility
Integrative theoretical perspective	ESG strategy, financial policy, and supply chain resilience are examined separately	Lack of a unified framework linking finance, governance, and sustainability	Develop an integrated framework positioning financial flexibility as a strategic enabler of ESG-oriented supply chains

3. Methodology

This study adopts a theory driven conceptual research design to examine how financial flexibility shapes ESG integration along the supply chain. Given the objective of developing an integrative theoretical perspective rather than testing specific hypotheses, the methodology emphasizes systematic theory synthesis, conceptual refinement, and mechanism development. Such an approach is well suited for addressing fragmented literatures and clarifying underexplored relationships among established constructs in strategic management, corporate finance, and supply chain sustainability.

The conceptual development proceeds through a structured review and analytical integration of three bodies of literature. The first body shows how ESG practices are implemented and governed across supply chains, with particular attention to interfirm coordination, compliance mechanisms, and relational governance. The second body conceptualizes financial flexibility as a strategic resource that enables firms to respond to uncertainty, reallocate capital, and sustain long term investments. The third body examines supply chain governance under conditions of risk, disruption, and sustainability pressure. Rather than treating these literatures as parallel streams, the analysis focuses on identifying their points of intersection and the theoretical tensions that arise when ESG objectives confront financial constraints.

Building on this synthesis, the study employs an abductive reasoning process to derive a set of core mechanisms linking financial flexibility to ESG oriented supply chain integration. Abductive reasoning allows theoretical insights to emerge from iterative engagement with prior research while remaining grounded in observed organizational challenges documented in the literature. Through this process, financial flexibility is reconceptualized from a firm level financial outcome to an active governance mechanism that conditions how ESG commitments are financed, coordinated, and sustained across supply chain relationships.

The development of the conceptual framework follows established practices in theory building research. Key constructs are first clearly defined and delimited to avoid conceptual overlap, particularly between financial flexibility, financial slack, and liquidity. The analysis then specifies relational mechanisms through which financial flexibility influences ESG integration, including showing how flexible financial structures support intertemporal investment smoothing, supplier support, and continuity of sustainability initiatives under uncertainty. Attention is also given to boundary conditions that may constrain these effects, such as governance quality and accountability structures, to prevent overly deterministic conclusions. To enhance theoretical rigor and transparency, the framework is constructed through explicit logical sequencing rather than illustrative speculation. Each proposed mechanism is grounded in insights drawn from the reviewed literatures and articulated in a way that allows future empirical operationalization. This design choice ensures that the framework not only contributes to theory development but also provides a foundation for subsequent empirical testing using qualitative, quantitative, or mixed methods approaches.

Finally, the conceptual methodology is complemented by a critical reflection on scope and limitations. The analysis focuses on focal firms and their immediate supply chain partners, recognizing that broader network effects and institutional contexts may further shape ESG integration outcomes. By explicitly acknowledging these boundaries, the study maintains analytical clarity while opening avenues for future research to extend the framework across industries, institutional environments, and governance regimes.

4. Theoretical Framework and Mechanisms

This study develops a theoretical framework that explains how financial flexibility shapes ESG integration along the supply chain. The framework responds to the fragmented treatment of

financial resources, sustainability strategy, and supply chain governance in prior research by integrating these elements into a coherent mechanism-based perspective. Rather than conceptualizing financial flexibility as a static financial outcome, the framework positions it as an active strategic enabler that conditions how ESG commitments are financed, coordinated, and sustained across interfirm relationships.

At the core of the framework is the recognition that ESG integration in supply chains is inherently intertemporal and interorganizational. Sustainability initiatives often require upfront investments whose benefits materialize only over extended horizons, while costs and risks are unevenly distributed across supply chain partners. Financial flexibility allows focal firms to manage these temporal and relational asymmetries by reallocating financial resources across time and across organizational boundaries. Figure 1 illustrates the framework by linking financial flexibility to ESG integration through a set of interrelated mechanisms that operate under conditions of uncertainty.

The first mechanism concerns intertemporal investment smoothing. ESG integration frequently involves phased implementation of environmental standards, labor practices, and governance procedures that generate delayed returns. Firms with higher financial flexibility are better able to absorb temporary inefficiencies and maintain ESG investments even when short term financial performance deteriorates. This capacity reduces the likelihood that sustainability initiatives will be suspended or reversed during periods of volatility. By enabling continuity in ESG related investments, financial flexibility stabilizes the implementation trajectory of sustainability practices across the supply chain and mitigates the disruptive effects of cyclical shocks.

A second mechanism operates through interfirm coordination and resource sharing. ESG integration often requires suppliers to upgrade processes, adopt new technologies, or comply with stricter monitoring requirements, all of which impose adjustment costs that suppliers may be unable or unwilling to bear independently. Financially flexible firms can facilitate ESG adoption by supporting suppliers through co investment arrangements, temporary cost absorption, or risk sharing mechanisms. These practices shift ESG governance from a purely compliance-oriented approach toward a more collaborative model, where sustainability objectives are pursued through joint problem solving rather than unilateral enforcement.

The third mechanism relates to resilience under uncertainty. Supply chains are increasingly exposed to disruptions stemming from economic downturns, regulatory changes, and geopolitical instability. Such shocks tend to intensify financial constraints precisely when ESG commitments are most vulnerable. Financial flexibility enhances the ability of firms to sustain ESG integration during disruptions by preserving liquidity buffers and access to funding that can be redeployed as conditions evolve. In this sense, financial flexibility links financial resilience with sustainability resilience, ensuring that ESG commitments remain credible even in adverse environments.

While these mechanisms highlight the enabling role of financial flexibility, the framework also emphasizes important boundary conditions. Financial flexibility alone does not guarantee effective ESG integration. Without appropriate governance and accountability structures, flexible financial resources may be diverted toward short term performance objectives, weakening sustainability commitments. The framework therefore underscores the importance of alignment between financial policies and ESG governance arrangements. When financial flexibility is embedded within coherent strategic priorities and monitoring systems, it reinforces ESG integration. When such alignment is absent, flexibility may dilute rather than strengthen sustainability outcomes.

5. Discussion
This study develops a theoretical perspective on how financial flexibility shapes ESG integration along the supply chain. By positioning financial flexibility as an enabling mechanism

rather than a passive financial condition, the framework advances understanding of sustainability as an intertemporal and interorganizational process. The discussion below reflects on how this perspective extends existing debates in ESG research, supply chain governance, and strategic finance.

A central implication of the framework is that ESG integration across supply chains cannot be fully explained by governance structures alone. While prior research has emphasized compliance mechanisms, buyer power, and institutional pressure as drivers of sustainability diffusion, these explanations implicitly assume that firms possess sufficient financial capacity to absorb the associated costs. The present framework makes this assumption explicit by theorizing financial flexibility as a condition that allows ESG commitments to be sustained when short term financial pressures intensify. This reframing helps reconcile why similar governance mechanisms produce divergent ESG outcomes across firms facing different financial constraints.

The framework also contributes to a more dynamic understanding of ESG strategy. Rather than treating ESG engagement as means of signaling legitimacy or improving long run performance, the analysis highlights the temporal tensions firms face when sustainability investments generate delayed or uncertain returns. Financial flexibility enables firms to smooth these tensions by reallocating capital across time and partners, thereby maintaining continuity in ESG initiatives during periods of volatility. This insight aligns ESG integration more closely with strategic investment theories that emphasize optionality, adaptability, and resilience under uncertainty.

From a supply chain perspective, the framework underscores the importance of financial considerations in shaping interfirm relationships. ESG integration often requires suppliers to adjust production processes, labor practices, or environmental controls, which can impose uneven costs across the chain. Firms with greater financial flexibility are better positioned to support such transitions through co investment, temporary cost absorption, or risk sharing arrangements. In this sense, financial flexibility alters not only whether ESG practices are adopted, but also how sustainability responsibilities are distributed across supply chain partners.

At the same time, the framework highlights important boundary conditions. Financial flexibility does not automatically lead to deeper ESG integration. Without appropriate governance and accountability structures, flexibility may reduce discipline and dilute sustainability commitments. This insight cautions against overly optimistic assumptions about slack resources and points to the need for alignment between financial policies and ESG governance mechanisms. The discussion thus emphasizes that financial flexibility is most effective when embedded within coherent strategic and governance architectures.

5. Implications

5.1. Theoretical Implications

This study offers several theoretical contributions to the literature on ESG, supply chain sustainability, and strategic finance. By integrating financial flexibility into the analysis of ESG oriented supply chains, the framework bridges a gap between corporate finance and sustainability research. Existing studies often treat financial conditions as background constraints, whereas this study theorizes financial flexibility as an active mechanism that shapes sustainability outcomes across organizational boundaries.

The framework also extends supply chain governance theory by introducing a financial dimension to interfirm coordination. Prior research has focused primarily on contractual, relational, and institutional mechanisms, leaving financial resource allocation under theorized. By showing how financial flexibility enables collaborative ESG implementation through

investment smoothing and supplier support, the study broadens the conceptual toolkit for analyzing sustainability governance in complex networks.

In addition, the study contributes to ESG research by shifting attention from firm level performance metrics to the processes through which sustainability practices are sustained over time. This process-oriented view emphasizes how ESG commitments are maintained under uncertainty rather than assuming linear progression toward improved outcomes. The proposed mechanisms offer a foundation for future empirical research to test when and how financial flexibility enhances ESG integration across different industries and institutional contexts.

5.2. Managerial Implications

For managers offering ESG commitments across supply chains, the framework highlights the strategic importance of aligning financial policies with sustainability objectives. ESG integration should not be treated as a standalone compliance initiative but as a long-term investment that requires sufficient financial adaptability. Managers can use financial flexibility to buffer short term disruptions, maintain supplier relationships, and avoid abrupt reversals of sustainability programs during economic downturns.

The analysis also suggests that financially flexible firms can play a coordinating role in ESG oriented supply chains. By providing transitional support to suppliers, sharing adjustment costs, or staging ESG investments over time, focal firms can foster more cooperative and resilient sustainability initiatives. Such approaches may be particularly valuable in global supply chains where suppliers face heterogeneous capabilities and constraints.

At the same time, managers should recognize the risks associated with unstructured flexibility. Without clear governance mechanisms and performance monitoring, financial slack may weaken accountability and reduce the effectiveness of ESG initiatives. The framework therefore encourages managers to design financial policies that balance adaptability with discipline, ensuring that flexibility reinforces rather than undermines sustainability goals.

6. Conclusion

This study addresses a fundamental yet underexplored question in sustainability governance: why some firms can sustain ESG commitments across supply chains while others retreat when faced with financial constraints or disruptions. By integrating insights from corporate finance and strategic management, we develop a theoretical framework that positions financial flexibility not as a passive financial condition, but as an active strategic enabler of ESG integration across organizational boundaries.

The framework identifies three interrelated mechanisms through which financial flexibility shapes supply chain sustainability. First, intertemporal investment smoothing allows firms to absorb temporary inefficiencies and maintain ESG investments despite short-term performance pressures. Second, enhanced interfirm coordination through co-investment and risk sharing transforms ESG governance from compliance-based enforcement to collaborative engagement. Third, resilience under uncertainty ensures continuity of sustainability initiatives during disruptions when they are most vulnerable. However, these mechanisms are contingent upon governance alignment as a critical boundary condition-without appropriate accountability structures, financial flexibility may dilute rather than strengthen ESG commitments.

The contributions of this study are threefold. Theoretically, it bridges the gap between corporate finance and supply chain sustainability research by reconceptualizing financial flexibility as a dynamic governance mechanism rather than a static resource constraint. It extends supply chain governance theory by illuminating how financial resource allocation

shapes interfirm coordination, cost distribution, and the long-term viability of ESG initiatives. Additionally, it advances ESG research by shifting focus from firm-level performance metrics to the intertemporal and interorganizational processes that sustain sustainability practices under uncertainty.

For managers, the framework underscores that successful ESG integration requires strategic alignment between financial policies and sustainability objectives. Financially flexible firms can play a coordinating role by supporting suppliers through transitional financing and shared investments, thereby fostering more resilient and cooperative supply chain relationships. However, managers must embed flexibility within robust governance architectures to prevent slack resources from weakening accountability and diluting sustainability performance.

Several limitations suggest directions for future research. First, as a theory-building conceptual study, the framework awaits empirical validation across diverse industry contexts and institutional environments. Future studies could operationalize financial flexibility using measures of cash holdings, unused debt capacity, and payout policy flexibility to test the proposed mechanisms quantitatively. Second, the framework primarily focuses on focal firms and immediate supply chain partners; extending the analysis to multi-tier network effects and broader institutional pressures would enrich its explanatory power. Third, future research should examine how different governance structures—contractual, relational, or stakeholder-based—moderate the effectiveness of financial flexibility in achieving ESG outcomes.

In conclusion, this study demonstrates that financial flexibility is indispensable for translating ESG ambitions into sustained supply chain practice. As sustainability risks increasingly manifest across interconnected networks, understanding how firms mobilize and reallocate financial resources becomes central to both academic inquiry and managerial practice. By integrating financial considerations into the core of sustainability governance, we provide a foundation for designing coherent strategies that reconcile long-term ESG objectives with the demands of dynamic and uncertain environments.

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