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Development Finance Adaptive Capacity under Polycrisis: Toward a Middle-Range Theory of Economic Transformation Resilience

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Abstract

The increasing convergence of interconnected global crises has fundamentally reshaped the context in which development finance operates, exposing the limitations of conventional theories that primarily explain the relationship between finance and economic growth under relatively stable conditions. Although recent scholarship has expanded discussions on resilience, climate finance, digital finance, and transformational adaptation, these perspectives remain fragmented and provide limited explanation of how development finance systems sustain long-term economic transformation under persistent polycrisis. This conceptual paper addresses this theoretical gap by developing a middle-range theory of Development Finance Adaptive Capacity (DFAC). Drawing on an integrative synthesis of the finance–growth, development finance, adaptive capacity, resilience, and polycrisis literature, the study proposes a conceptual framework that explains the adaptive mechanisms through which development finance supports economic transformation resilience. The framework conceptualizes DFAC as a higher-order construct comprising four interrelated dimensions: resource mobilization, institutional coordination, financial reconfiguration, and transformational learning. By repositioning development finance as an adaptive institutional capability rather than merely a financing mechanism, the proposed theory extends existing development finance literature and provides a foundation for future construct operationalization, empirical validation, and policy innovation aimed at strengthening resilient and sustainable economic transformation under conditions of persistent systemic uncertainty.

Keywords

development finance; adaptive capacity; polycrisis; economic transformation resilience; institutional resilience

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1. Introduction

The global development landscape has entered an era characterized by the simultaneous interaction of multiple, interconnected, and mutually reinforcing crises. Unlike previous episodes of economic instability, contemporary disruptions are no longer isolated events but have evolved into an intertwined system of health emergencies, geopolitical conflicts, climate change, financial instability, energy insecurity, food crises, and technological disruptions. This phenomenon, increasingly described as polycrisis, fundamentally challenges the assumptions underlying conventional development theories and policy frameworks (Lawrence *et al.*, 2024; Siirilä & Salonen, 2024; Søgaard Jørgensen *et al.*, 2024). Rather than producing temporary economic shocks, polycrisis generates cascading and recursive effects that propagate across economic, financial, environmental, and institutional systems, making uncertainty the new normal for development planning.

Within this evolving context, development finance has become more critical than ever. Historically, development finance has been viewed primarily as a mechanism for mobilizing capital to accelerate economic growth, expand productive investment, alleviate poverty, and facilitate structural transformation. Classical finance-growth theories argue that financial development enhances resource allocation efficiency, promotes investment, stimulates innovation, and ultimately drives long-term economic growth (King & Levine, 1993; Levine, 1997). Subsequent studies further demonstrate that financial intermediation improves productivity through more efficient capital allocation and supports industrial expansion (Beck *et al.*, 2000; Levine *et al.*, 2000). Institutional perspectives similarly emphasize that legal quality, investor protection, and financial governance constitute essential prerequisites for effective financial development (La Porta *et al.*, 1998).

These foundational perspectives have profoundly influenced development policies over the past three decades. International financial institutions, national development banks, and multilateral development agencies have generally focused on expanding financial access, strengthening banking systems, deepening capital markets, and promoting financial inclusion as primary strategies for economic development. Empirical evidence consistently indicates that improved access to finance contributes to poverty reduction, firm growth, entrepreneurial activities, and broader economic inclusion (Allen *et al.*, 2016; Beck *et al.*, 2007; Christelis *et al.*, 2015). Consequently, development finance has traditionally been conceptualized as an enabling mechanism that supports economic transformation through capital mobilization and financial intermediation.

However, the unprecedented complexity of recent global crises has exposed significant limitations of this conventional perspective. The COVID-19 pandemic demonstrated that even financially developed economies remain highly vulnerable to systemic disruptions, while geopolitical tensions, supply-chain fragmentation, sovereign debt distress, accelerating climate risks, and energy transitions have further amplified structural vulnerabilities across both developed and developing countries. These overlapping crises interact dynamically rather than independently, producing nonlinear feedback loops that cannot be adequately explained by traditional finance-growth paradigms (Lawrence *et al.*, 2024). Instead of operating within relatively stable institutional environments, development finance institutions increasingly function under conditions characterized by persistent uncertainty, rapidly changing risks, and interconnected systemic shocks.

Recent studies therefore suggest an important conceptual shift from viewing finance merely as a driver of economic growth toward understanding finance as an adaptive mechanism that enhances societal resilience. Emerging research on climate finance, green finance, digital finance, and transformational adaptation demonstrates that financial systems increasingly perform functions extending beyond capital provision. Financial institutions now facilitate adaptive investment, strengthen institutional flexibility, enable rapid resource reallocation, and enhance resilience against multidimensional shocks (Giglio *et al.*, 2021; Hou *et al.*, 2023; Kuhl & Shinn, 2022; Xia *et al.*, 2022). Similarly, growing evidence indicates that green finance contributes not only to environmental sustainability but also to regional economic resilience by improving adaptive investment capacity and supporting structural transformation during periods of systemic disruption (Shen *et al.*, 2024; Wei, 2024; Zhang, 2025).

Despite these important developments, the emerging literature remains fragmented. Existing studies typically examine adaptive finance through sector-specific perspectives, including climate adaptation finance, digital finance, green finance, financial resilience, or crisis management. While these studies provide valuable insights, they rarely explain how the broader development finance system itself evolves to maintain economic transformation amid interacting crises. Current conceptualizations continue to emphasize individual financial instruments or policy interventions rather than examining the systemic adaptive capacity of development finance as an integrated institutional system. Consequently, the literature lacks a comprehensive theoretical explanation regarding how development finance dynamically mobilizes, reallocates, coordinates, and transforms financial resources in response to polycrisis conditions.

This limitation reflects a broader theoretical gap within development finance research. Classical finance-growth theories implicitly assume relatively stable institutional environments in which financial systems efficiently allocate resources toward productive investment. Likewise, many contemporary resilience studies primarily evaluate financial system performance after crises have occurred, focusing on recovery, stability, or financial flexibility ((Demirgüç-Kunt *et al.*, 2021; Ding *et al.*, 2021; Fahlenbrach *et al.*, 2021). Comparatively little attention has been devoted to understanding the adaptive processes through which development finance continuously adjusts institutional arrangements, governance mechanisms, financing priorities, and resource allocation strategies before, during, and after multiple interacting crises. Consequently, adaptive capacity remains conceptually underdeveloped within the development finance literature.

Addressing this gap is increasingly important because economic transformation under polycrisis requires more than financial stability or temporary recovery. Sustainable transformation depends on the capacity of development finance systems to continuously anticipate emerging risks, coordinate multiple institutions, mobilize diverse financial resources, facilitate organizational learning, and support structural adaptation across sectors. These adaptive processes determine whether economies merely recover from crises or successfully transform toward more resilient and inclusive development trajectories. Therefore, adaptive capacity should be conceptualized not simply as an organizational capability but as an inherent property of development finance systems operating under conditions of persistent uncertainty.

Against this background, this article proposes a new conceptual framework termed Development Finance Adaptive Capacity (DFAC). DFAC is defined as the dynamic capability of development finance systems to mobilize, coordinate, reconfigure, and continuously learn in order to sustain economic transformation under conditions of polycrisis. Rather than replacing existing finance-growth theories, the proposed framework extends them by incorporating adaptive mechanisms that become increasingly essential under contemporary systemic uncertainty. In doing so, the article responds to recent calls for more integrative theorization of polycrisis, resilience, and transformational development (Lawrence *et al.*, 2024; Tunçalp, 2026).

The primary contribution of this conceptual paper is threefold. First, it introduces DFAC as a novel construct that extends the theoretical foundations of development finance beyond conventional capital allocation and financial intermediation. Second, it develops a middle-range theory explaining the mechanisms through which adaptive development finance strengthens economic transformation resilience in environments characterized by interconnected crises. Third, the article integrates previously fragmented literature on finance and growth, development finance, adaptive capacity, financial resilience, climate finance, and polycrisis into a coherent conceptual framework that provides a foundation for future empirical research. By doing so, this study aims to reposition development finance from a passive source of development funding into an active adaptive system capable of sustaining long-term economic transformation in an increasingly uncertain global environment.

2. Reframing Existing Theory

The role of finance in economic development has undergone substantial conceptual evolution over the past several decades. Early theories primarily viewed finance as an engine of economic growth by facilitating capital accumulation, improving resource allocation, and reducing transaction costs. Over time, however, successive global crises have demonstrated that development finance performs functions extending beyond investment mobilization. Increasingly, financial systems are expected not only to stimulate growth but also to absorb shocks, coordinate institutional responses, and enable long-term structural transformation under conditions of persistent uncertainty. This evolution necessitates a theoretical reframing that places adaptive capacity at the center of development finance.

2.1 The Evolution of Development Finance

The modern understanding of development finance is deeply rooted in the finance–growth literature. Seminal contributions by King & Levine (1993) and Levine (1997) established that financial development promotes economic growth by mobilizing savings, facilitating efficient capital allocation, monitoring investments, and supporting technological innovation. Subsequent empirical studies reinforced these propositions, demonstrating that well-functioning financial intermediaries enhance productivity and accelerate structural transformation across countries (Beck *et al.*, 2000; Levine *et al.*, 2000).

Institutional perspectives further expanded this framework by emphasizing the importance of legal systems, investor protection, and governance quality in determining financial development outcomes (La Porta *et al.*, 1997, 1998). These studies shifted attention from purely financial variables toward institutional arrangements that enable financial markets to function efficiently. Consequently, development finance came to encompass not only financial intermediation but also institutional capacity, regulatory quality, and governance structures supporting long-term development.

The scope of development finance widened further through the emergence of financial inclusion research. Rather than focusing exclusively on aggregate financial deepening, scholars increasingly emphasized equitable access to financial services, particularly for small firms, low-income households, and underserved communities. Access to finance was shown to reduce inequality, stimulate entrepreneurship, improve firm growth, and strengthen poverty reduction (Allen *et al.*, 2016; Beck *et al.*, 2005, 2007; Christelis *et al.*, 2015). In this broader perspective, development finance became an instrument for promoting inclusive economic transformation rather than merely increasing aggregate investment.

More recently, sustainability concerns have expanded the boundaries of development finance once again. Climate finance, green finance, transition finance, and sustainable investment have emerged as integral components of development strategies. Rather than allocating capital solely according to financial returns, these approaches seek simultaneously to achieve economic, environmental, and social objectives (Dikau & Volz, 2021; Flammer, 2021; Giglio *et al.*, 2021; Pástor *et al.*, 2021). This transition reflects an important conceptual shift: development finance is increasingly evaluated not only by its contribution to growth but also by its ability to support sustainable transformation under systemic risk.

Despite these advances, the dominant theoretical logic remains largely linear. Development finance continues to be conceptualized primarily as a mechanism through which financial resources generate investment, productivity, and economic growth. Such perspectives implicitly assume relatively stable institutional environments where crises represent temporary disruptions rather than persistent structural conditions. Consequently, they provide limited explanatory power for understanding how development finance responds to interacting and continuously evolving crises.

2.2 Adaptive Capacity as a Missing Dimension

The concept of adaptive capacity originates primarily from resilience studies, climate adaptation, and adaptive governance. Broadly defined, adaptive capacity refers to the ability of individuals, organizations, or systems to anticipate change, respond effectively to disturbances, reorganize internal resources, and learn from evolving conditions without losing essential functions. Unlike resilience, which often emphasizes recovery after disruption, adaptive capacity highlights continuous adjustment and transformation before, during, and after crises.

Recent studies increasingly recognize the importance of adaptive mechanisms within financial systems. Kuhl & Shinn (2022), for example, argue that transformational adaptation requires financial arrangements capable of supporting long-term institutional change rather than merely financing short-term recovery. Similarly, research on corporate financial resilience demonstrates that financial flexibility, liquidity management, and organizational learning significantly influence firms' ability to withstand unexpected shocks (Ding *et al.*, 2021; Fahlenbrach *et al.*, 2021). These findings suggest that finance contributes to resilience not simply through capital availability but through dynamic capabilities enabling rapid adaptation.

Parallel developments have emerged in the literature on digital finance and green finance. Digital financial systems improve adaptive responses by accelerating information flows, expanding financial accessibility, and facilitating resource reallocation during crises (Hou *et al.*, 2023; Xia *et al.*, 2022). Likewise, green finance increasingly functions as a strategic instrument that supports long-term structural adjustment, enhances regional resilience, and promotes sustainable economic transformation (Shen *et al.*, 2024; Wei, 2024; Zhang, 2025). Collectively, these studies indicate that adaptive capacity is becoming an increasingly important function of modern financial systems.

Nevertheless, adaptive capacity remains conceptually fragmented within the development finance literature. Existing research typically examines isolated mechanisms, such as financial flexibility, digitalization, climate adaptation, or institutional resilience, without integrating them into a unified theoretical explanation of how development finance systems adapt to complex and interacting crises. Consequently, adaptive capacity has yet to be explicitly conceptualized as a core attribute of development finance itself.

2.3 Economic Transformation Resilience

The growing emphasis on resilience also requires reconsideration of what constitutes successful economic transformation. Traditional development frameworks often equate resilience with the rapid restoration of pre-crisis economic conditions. However, recent scholarship increasingly argues that returning to the previous equilibrium may be neither feasible nor desirable under conditions of polycrisis. Instead, resilience should be understood as the capacity to transform economic structures while maintaining long-term developmental trajectories.

This distinction is particularly important because contemporary crises simultaneously affect production systems, financial markets, institutional arrangements, technological change, and environmental sustainability. Consequently, adaptive responses require structural reconfiguration rather than temporary stabilization. Empirical studies increasingly demonstrate that regions exhibiting stronger institutional coordination, digital financial infrastructure, and green investment capacity recover more effectively while simultaneously accelerating structural transformation (Hou *et al.*, 2023; Hu *et al.*, 2022; Zhang, 2025).

Economic transformation resilience therefore represents a dynamic process through which economies continuously reorganize productive systems, institutions, and financial arrangements in response to evolving risks. Rather than focusing solely on crisis recovery, this perspective emphasizes long-term adaptability, innovation, and institutional learning. Development finance becomes central to this process because financial systems influence investment priorities, resource allocation, technological diffusion, and coordination among public and private actors.

2.4 Towards Development Finance Adaptive Capacity

The foregoing discussion suggests that existing theories capture important but incomplete dimensions of development finance. Finance–growth theories explain how financial systems stimulate development under relatively stable conditions, while resilience studies illuminate adaptive responses to shocks. However, neither perspective adequately explains how development finance evolves as an integrated adaptive system capable of sustaining economic transformation amid persistent and interconnected crises.

To bridge this theoretical divide, this article introduces Development Finance Adaptive Capacity (DFAC) as a higher-order conceptual construct. DFAC is defined as the dynamic capability of development finance systems to mobilize, coordinate, reconfigure, and continuously learn in order to sustain inclusive economic transformation under conditions of polycrisis. This definition extends conventional understandings of development finance by recognizing adaptation as an endogenous capability rather than an external policy response.

Four interrelated dimensions characterize DFAC. The first is resource mobilization capacity, referring to the ability to secure and redirect financial resources rapidly in response to emerging risks. The second is institutional coordination capacity, reflecting the capability to align governments, development banks, private investors, and international organizations toward shared developmental objectives. The third is financial reconfiguration capacity, capturing the flexibility to redesign financial instruments, investment priorities, and financing mechanisms as crises evolve. Finally, transformational learning capacity represents the ability of development finance institutions to generate knowledge, incorporate experience, and continuously improve governance across successive crisis episodes.

Together, these dimensions reposition development finance as an adaptive institutional system rather than a passive financing mechanism. They also provide the conceptual foundation for the middle-range theory developed in the following sections, which explains how adaptive financial capabilities contribute to economic transformation resilience under conditions of polycrisis.

3. Polycrisis and the Limits of Existing Perspectives

The accelerating convergence of global crises has fundamentally altered the context in which development finance operates. Unlike conventional crises that emerge from a single source and follow relatively predictable recovery trajectories, polycrisis involves multiple disruptions that interact simultaneously across economic, environmental, geopolitical, technological, and social systems. These interactions generate cascading effects, reinforce structural vulnerabilities, and create new forms of uncertainty that cannot be understood through linear models of development. Consequently, theories developed under assumptions of stability and equilibrium face increasing difficulty in explaining the role of development finance in sustaining long-term economic transformation.

Recent scholarship conceptualizes polycrisis as more than the coexistence of multiple crises. Instead, it represents a system of interconnected disturbances in which one crisis amplifies the intensity, duration, and consequences of others through complex feedback mechanisms (Lawrence *et al.*, 2024; Søgaard Jørgensen *et al.*, 2024). Climate change intensifies food insecurity; geopolitical conflicts disrupt energy markets; sovereign debt pressures constrain fiscal responses; and technological disruptions reshape labor markets and financial systems simultaneously. The cumulative effect is not merely a larger shock but an evolving system characterized by recursive interactions, path dependency, and persistent uncertainty. Within such environments, development finance must continuously adapt rather than simply restore pre-crisis conditions.

This reality exposes important limitations within the dominant finance–growth paradigm. Classical theories assume that financial systems contribute to development primarily by improving capital allocation, facilitating investment, and supporting productivity growth (Beck *et al.*, 2000; King & Levine, 1993; Levine, 1997; Levine *et al.*, 2000). These propositions remain highly influential because they successfully explain long-term development under relatively stable institutional conditions. However, they implicitly assume that financial institutions operate within environments where shocks are temporary, markets eventually return to equilibrium, and institutional arrangements remain broadly intact. Such assumptions become increasingly problematic when crises are overlapping, prolonged, and mutually reinforcing.

Similarly, institutional approaches emphasize governance quality, legal systems, and financial regulation as determinants of financial development (La Porta *et al.*, 1997, 1998). Although these perspectives recognize the importance of institutions, they generally conceptualize institutional quality as a relatively stable condition that facilitates efficient financial intermediation. They provide limited explanation of how institutions themselves adapt when confronted with rapidly evolving crises that require continuous policy innovation, coordination across sectors, and dynamic reallocation of financial resources. As a result, institutional stability is often emphasized more than institutional adaptability.

The literature on financial stability and macroprudential regulation addresses systemic vulnerabilities more directly by examining contagion, liquidity risks, interconnected financial networks, and prudential policy interventions (Allen & Gale, 2000; Cerutti *et al.*, 2017; Haldane & May, 2011). More recent studies emerging from the COVID-19 pandemic further demonstrate the importance of financial flexibility, banking resilience, and crisis-responsive policy measures in maintaining financial stability (Demirgüç-Kunt *et al.*, 2021; Ding *et al.*, 2021; Fahlenbrach *et al.*, 2021). These contributions significantly enhance understanding of crisis management within financial systems. Nevertheless, their primary concern remains the preservation of financial stability rather than the broader process of sustaining economic transformation under continuous systemic disruption.

Parallel developments in climate finance, green finance, and digital finance have begun to move beyond traditional growth-oriented perspectives. Emerging evidence suggests that financial systems increasingly facilitate adaptive investment, technological upgrading, climate transition, and institutional flexibility (Giglio *et al.*, 2021; Hou *et al.*, 2023; Kuhl & Shinn, 2022; Wei, 2024). Green finance, for example, is now viewed not only as an environmental policy instrument but also as a mechanism for enhancing long-term regional resilience and supporting structural transformation (Shen *et al.*, 2024; Zhang, 2025). Likewise, digital finance has demonstrated its capacity to improve adaptive responses by expanding financial access and accelerating resource mobilization during crises (Xia *et al.*, 2022). Although these studies represent important advances, they typically focus on specific financial domains and therefore remain fragmented. They do not yet provide an integrated theoretical explanation of how development finance systems collectively develop adaptive capabilities across multiple interacting crises.

The preceding discussion demonstrates that existing theoretical perspectives offer important but partial explanations of development finance under polycrisis. The following synthesis clarifies their respective strengths, limitations, and unresolved explanatory gaps.

Table 1. Comparative Analysis of Existing Development Finance Perspectives and Their Theoretical Limitations

Theoretical Perspective	Primary Contribution	Key Limitation under Polycrisis
Finance–Growth Theory	Explains how financial development promotes investment, productivity, and long-term economic growth through efficient capital allocation.	Assumes relatively stable institutional environments and provides limited explanation of continuous adaptation under interacting systemic crises.
Institutional Perspective	Emphasizes governance quality, legal systems, and regulatory institutions as foundations for effective financial development.	Focuses primarily on institutional stability rather than the dynamic institutional adaptation required during persistent polycrisis.
Financial Stability and Resilience Perspective	Explains how financial systems absorb shocks and maintain stability through prudential regulation and crisis management.	Concentrates on maintaining financial stability and post-crisis recovery, with limited attention to sustaining long-term economic transformation.
Climate, Green, and Digital Finance Perspective	Demonstrates how specialized financial mechanisms support sustainability, innovation, and adaptive investment.	Remains fragmented across sectors and does not provide an integrated explanation of adaptive development finance as a systemic capability.
Overall Assessment	Collectively enriches understanding of finance and development from complementary perspectives.	No existing perspective integrates financial mobilization, institutional coordination, financial reconfiguration, and transformational learning into a unified adaptive framework for economic transformation under polycrisis.

Source: Developed by the authors based on the synthesized literature.

Table 1 demonstrates that each theoretical perspective contributes valuable insights into development finance but remains insufficient to explain how financial systems sustain economic transformation under persistent polycrisis. Collectively, these limitations reveal the need for a more integrative conceptual framework that explicitly incorporates adaptive institutional capability, thereby providing the theoretical rationale for the proposed Development Finance Adaptive Capacity (DFAC) framework.

These limitations reveal three interrelated conceptual gaps. The first gap concerns the absence of an explicit adaptive mechanism within development finance theory. Existing models largely explain how finance supports growth or stabilizes markets but devote relatively little attention to the dynamic capabilities through which development finance continuously anticipates, absorbs, and responds to evolving systemic risks. Adaptation is frequently treated as an external policy intervention rather than an endogenous characteristic of financial systems. Consequently, the literature provides only limited insight into how development finance institutions reorganize priorities, redesign financial instruments, and coordinate responses as crisis conditions change over time.

The second gap involves insufficient attention to cross-system interaction. Polycrisis is inherently multidimensional because economic, financial, environmental, technological, and geopolitical systems evolve simultaneously and influence one another through nonlinear feedback loops (Lawrence *et al.*, 2024). However, most existing studies remain organized around sector-specific perspectives, such as banking resilience, climate finance, financial inclusion, or macroprudential regulation. While each contributes valuable knowledge, they rarely explain how these domains interact within an integrated development finance system. This fragmentation limits theoretical understanding of how adaptive responses emerge across institutional boundaries.

The third gap relates to the outcome of development finance itself. Much of the existing literature evaluates success in terms of economic growth, financial stability, poverty reduction, or post-crisis recovery. These outcomes remain important, yet they do not fully capture the challenges of sustained transformation under conditions of persistent uncertainty. In the context of polycrisis, the objective extends beyond restoring previous economic performance toward enabling economies to continuously reconfigure production systems, institutions, investment priorities, and governance structures. This broader objective may be understood as economic transformation resilience, a concept that remains insufficiently theorized within the development finance literature.

Taken together, these conceptual gaps suggest that existing theories are individually valuable but collectively incomplete. Finance–growth theory explains capital allocation, institutional theory explains governance conditions, macroprudential theory explains financial stability, and resilience research explains adaptive responses. However, none of these perspectives explicitly theorizes the dynamic capability through which development finance systems integrate financial mobilization, institutional coordination, policy learning, and structural reconfiguration to sustain development amid interacting crises.

Addressing this theoretical fragmentation requires moving beyond incremental extensions of existing models toward a more integrative conceptual framework. Rather than treating adaptive responses as isolated policy instruments or crisis-specific interventions, development finance should be understood as a dynamic institutional system whose effectiveness depends on its capacity to learn, coordinate, innovate, and continuously reconfigure itself as external conditions evolve. Such a perspective provides the conceptual foundation for a middle-range theory that connects the established insights of finance and development with the emerging realities of polycrisis.

The preceding discussion demonstrates that no single theoretical perspective adequately explains adaptive development finance under persistent polycrisis. An integrated theoretical foundation is therefore required to support the proposed framework.

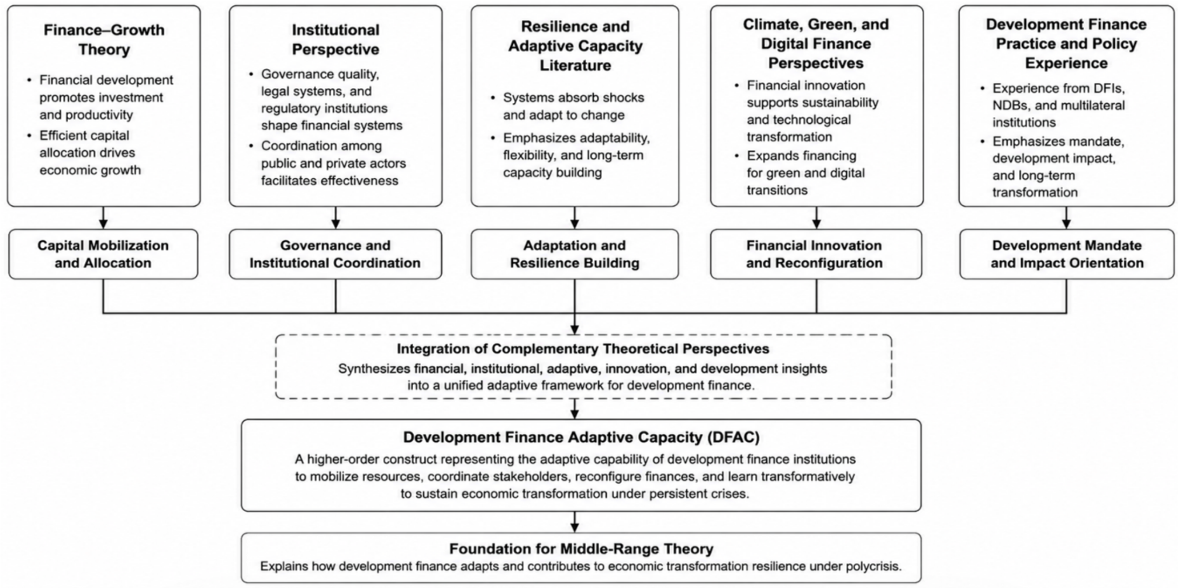

Figure 1. Theoretical Integration toward Development Finance Adaptive Capacity (DFAC)
Source: Developed by the authors based on the integration of finance–growth, institutional, resilience, adaptive capacity, and sustainable finance literature.

Figure 1 illustrates the theoretical integration underlying Development Finance Adaptive Capacity (DFAC). Rather than replacing existing perspectives, the proposed framework synthesizes complementary insights from finance–growth theory, institutional theory, resilience, adaptive capacity, and emerging sustainable finance literature. This integration establishes the conceptual foundation for developing DFAC as a middle-range theory capable of explaining adaptive development finance under persistent polycrisis conditions.

Accordingly, the next section develops Development Finance Adaptive Capacity (DFAC) as a middle-range theoretical framework that explains how adaptive financial systems contribute to economic transformation resilience. By identifying the core dimensions, mechanisms, and propositions underlying DFAC, the framework seeks to bridge the conceptual divide between development finance, adaptive capacity, and resilience, while offering a coherent explanation of development finance in an era increasingly defined by persistent and interconnected global crises.

4. Developing a Middle-Range Theory

The preceding sections have shown that while existing theories explain important dimensions of finance, development, and resilience, they remain insufficient to explain how development finance systems sustain economic transformation amid persistent and interconnected crises. The finance–growth literature emphasizes efficient capital allocation, institutional theories focus on governance quality, and resilience studies highlight adaptive responses to shocks. However, these perspectives have largely evolved independently and therefore provide only partial explanations of development finance under conditions of polycrisis. To address this theoretical fragmentation, this article proposes Development Finance Adaptive Capacity (DFAC) as the central construct of a middle-range theory explaining how development finance systems facilitate economic transformation resilience.

Middle-range theories seek to explain specific social mechanisms that connect observable phenomena through conceptually coherent and empirically testable propositions. Rather than developing an all-encompassing grand theory, they bridge abstract theoretical principles with practical realities by identifying causal processes operating within defined contexts. In the present study, the context is polycrisis, the focal mechanism is adaptive capacity within development finance systems, and the outcome is economic transformation resilience.

4.1 Defining Development Finance Adaptive Capacity

Development Finance Adaptive Capacity (DFAC) is defined as the dynamic capability of development finance systems to mobilize, coordinate, reconfigure, and continuously learn in order to sustain inclusive economic transformation under conditions of persistent and interacting crises.

This definition differs from existing conceptualizations of development finance in several important respects. First, it shifts attention from the quantity of financial resources toward the capability of financial systems to respond dynamically to changing conditions. Conventional approaches typically evaluate development finance according to investment volume, financial deepening, or credit expansion (King & Levine, 1993; Levine, 1997). DFAC instead emphasizes the quality of systemic adaptation that enables financial resources to remain developmentally effective despite rapidly evolving uncertainties.

Second, DFAC conceptualizes adaptation as an endogenous characteristic of development finance systems rather than as an external policy response. Existing resilience research often examines crisis management after shocks have occurred (Ding *et al.*, 2021; Fahlenbrach *et al.*, 2021), whereas DFAC views adaptation as a continuous institutional capability encompassing anticipation, adjustment, learning, and transformation before, during, and after crises.

Finally, DFAC extends development finance beyond financial intermediation by integrating institutional coordination, organizational learning, policy flexibility, and strategic resource reallocation into a single theoretical construct. Development finance therefore becomes an adaptive institutional architecture capable of supporting long-term structural transformation rather than merely financing development projects.

4.2 Dimensions of Development Finance Adaptive Capacity

The proposed theory conceptualizes DFAC as comprising four mutually reinforcing dimensions.

Development Finance Adaptive Capacity is conceptualized as a higher-order construct comprising four mutually reinforcing dimensions. Together, these dimensions explain how adaptive financial systems sustain economic transformation under persistent polycrisis.

Table 2. Core Dimensions of Development Finance Adaptive Capacity (DFAC)

Dimension	Adaptive Function	Contribution to Economic Transformation Resilience
Resource Mobilization Capacity	Secures, diversifies, and reallocates financial resources rapidly in response to changing development priorities and emerging systemic risks.	Ensures continuous investment support despite resource constraints and evolving crisis conditions.
Institutional Coordination Capacity	Aligns governments, development finance institutions, private investors, and international organizations through coordinated governance and decision-making.	Reduces institutional fragmentation, strengthens policy coherence, and improves collective adaptive responses.
Financial Reconfiguration Capacity	Adjusts financial instruments, investment priorities, and financing mechanisms to accommodate changing economic, environmental, and technological conditions.	Enables flexible structural adjustment and sustained financing for long-term transformation.
Transformational Learning Capacity	Generates institutional learning through policy evaluation, knowledge integration, and continuous organizational adaptation across successive crises.	Strengthens cumulative adaptive capability and enhances long-term resilience through continuous institutional improvement.

Source: Developed by the authors based on the proposed DFAC framework.

Table 2 summarizes the conceptual architecture of DFAC by identifying the four interdependent dimensions that collectively constitute adaptive capacity within development finance systems. Rather than operating independently, these dimensions reinforce one another to facilitate continuous institutional adaptation, strategic resource allocation, and policy learning. Their interaction provides the principal mechanism through which development finance supports resilient and sustainable economic transformation under polycrisis conditions.

1) Resource Mobilization Capacity

The first dimension refers to the ability of development finance systems to rapidly secure, diversify, and redirect financial resources toward emerging developmental priorities. Under polycrisis, financing requirements change continuously as governments respond simultaneously to health emergencies, climate adaptation, food security, infrastructure resilience, and economic recovery. Adaptive financial systems therefore require flexible resource mobilization that extends beyond traditional public expenditure toward blended finance, climate finance, development banks, multilateral funding, and private-sector participation (Giglio *et al.*, 2021; Zeng, 2025).

Resource mobilization is adaptive not simply because additional capital becomes available but because financing mechanisms can rapidly adjust to evolving developmental needs without compromising long-term sustainability.

2) Institutional Coordination Capacity

Financial resources alone rarely produce effective transformation unless supported by coordinated institutional action. The second dimension therefore captures the capability of development finance systems to align governments, central banks, multilateral development banks, private investors, regulatory agencies, and civil society organizations around common developmental objectives.

Polycrisis increases institutional interdependence because policy responses within one sector frequently generate consequences elsewhere. Climate adaptation influences fiscal sustainability; energy transitions affect industrial competitiveness; financial regulation shapes investment incentives. Consequently, effective development finance increasingly depends upon institutional coordination that reduces fragmentation and enhances collective decision-making.

This perspective extends institutional theories of finance (La Porta *et al.*, 1997, 1998) by emphasizing dynamic coordination rather than institutional stability alone.

3) Financial Reconfiguration Capacity

The third dimension reflects the capability to redesign financial instruments, investment priorities, governance arrangements, and financing mechanisms as external conditions evolve.

Traditional financial systems often prioritize efficiency under stable conditions. Adaptive systems, by contrast, prioritize flexibility under uncertainty. Financial reconfiguration may involve shifting from conventional infrastructure financing toward climate adaptation, expanding digital financial platforms, redesigning guarantee mechanisms for SMEs, introducing blended finance arrangements, or mobilizing transition finance for green industrial transformation.

Recent studies on digital finance and green finance illustrate how financial innovation enables more adaptive responses during systemic disruptions (Hou *et al.*, 2023; Shen *et al.*, 2024; Wei, 2024; Xia *et al.*, 2022). DFAC integrates these developments within a broader institutional framework rather than treating them as isolated innovations.

4) Transformational Learning Capacity

The fourth dimension represents the ability of development finance systems to generate knowledge, evaluate policy experiences, and continuously improve institutional responses across successive crises.

Polycrisis is characterized by uncertainty that cannot be eliminated through prediction alone. Consequently, adaptive systems depend upon learning processes that facilitate policy experimentation, institutional memory, cross-sector collaboration, and continuous organizational improvement. Learning enables development finance institutions to revise financing priorities, strengthen governance arrangements, and improve coordination as new risks emerge.

Transformational learning distinguishes adaptive development finance from reactive crisis management because institutional improvement becomes cumulative across multiple episodes rather than episodic following individual crises.

4.3 The Causal Mechanism of DFAC

The central proposition of this middle-range theory is that development finance contributes to resilience through adaptive institutional processes rather than financial expansion alone.

Polycrisis creates multidimensional uncertainty that disrupts conventional development trajectories. In response, development finance systems possessing high adaptive capacity are better able to mobilize financial resources, coordinate institutions, redesign financing mechanisms, and incorporate continuous learning. These adaptive processes enable economies to maintain structural transformation despite repeated disruptions.

Accordingly, DFAC functions as the principal mediating mechanism linking polycrisis and economic transformation resilience. Rather than assuming that crises inevitably reduce development performance, the proposed theory argues that adaptive financial capabilities can partially offset systemic disruptions by enhancing institutional flexibility and accelerating structural adjustment.

Economic transformation resilience therefore emerges not from resistance to change but from the capacity to transform while preserving long-term developmental objectives. Development finance becomes the institutional infrastructure through which adaptation is translated into sustained transformation.

Adaptive development finance operates through interconnected institutional processes rather than isolated financial interventions. Understanding these causal relationships is essential for explaining how adaptive capacity supports resilient economic transformation under polycrisis.

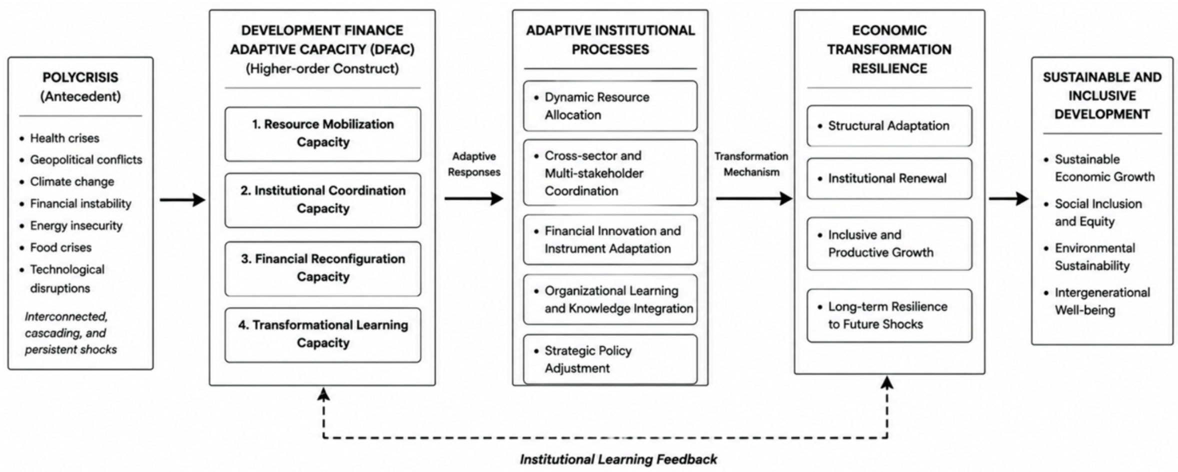

Figure 2. Adaptive Causal Mechanism of Development Finance Adaptive Capacity
Source: Developed by the authors based on the proposed DFAC mechanism.

Figure 2 illustrates the causal mechanism through which Development Finance Adaptive Capacity translates systemic uncertainty into resilient economic transformation. Rather than exerting direct effects, DFAC operates through adaptive institutional processes involving resource mobilization, coordination, financial reconfiguration, and continuous learning. The feedback loop highlights that institutional learning progressively strengthens adaptive capability, reinforcing long-term resilience and sustainable development across successive polycrisis episodes.

4.4 Middle-Range Propositions

The proposed theory generates four conceptual propositions suitable for future empirical testing.

Proposition 1 (P1).
Higher levels of Development Finance Adaptive Capacity enhance the ability of economies to sustain economic transformation under conditions of polycrisis.

This proposition positions adaptive capacity as the primary explanatory mechanism linking development finance with transformation resilience.

Proposition 2 (P2).
Institutional coordination strengthens the positive influence of resource mobilization on economic transformation resilience.

Mobilized financial resources generate greater developmental impact when coordinated across governments, development finance institutions, private investors, and international organizations.

Proposition 3 (P3).
Financial reconfiguration mediates the relationship between adaptive capacity and transformation resilience by enabling development finance systems to continuously align financial instruments with evolving developmental priorities.

This proposition emphasizes institutional flexibility rather than financial stability alone.

Proposition 4 (P4).
Transformational learning reinforces the long-term effectiveness of Development Finance Adaptive Capacity by improving institutional adaptation across successive crisis episodes.

Learning generates cumulative institutional capability, allowing development finance systems to become progressively more adaptive over time rather than repeatedly responding to crises from similar starting points. These propositions constitute the explanatory core of the proposed middle-range theory and provide a foundation for future empirical operationalization.

4.5 Conceptual Framework

The preceding arguments culminate in an integrated theoretical explanation that consolidates the proposed constructs, mechanisms, and outcomes into a coherent framework explaining adaptive development finance under persistent polycrisis.

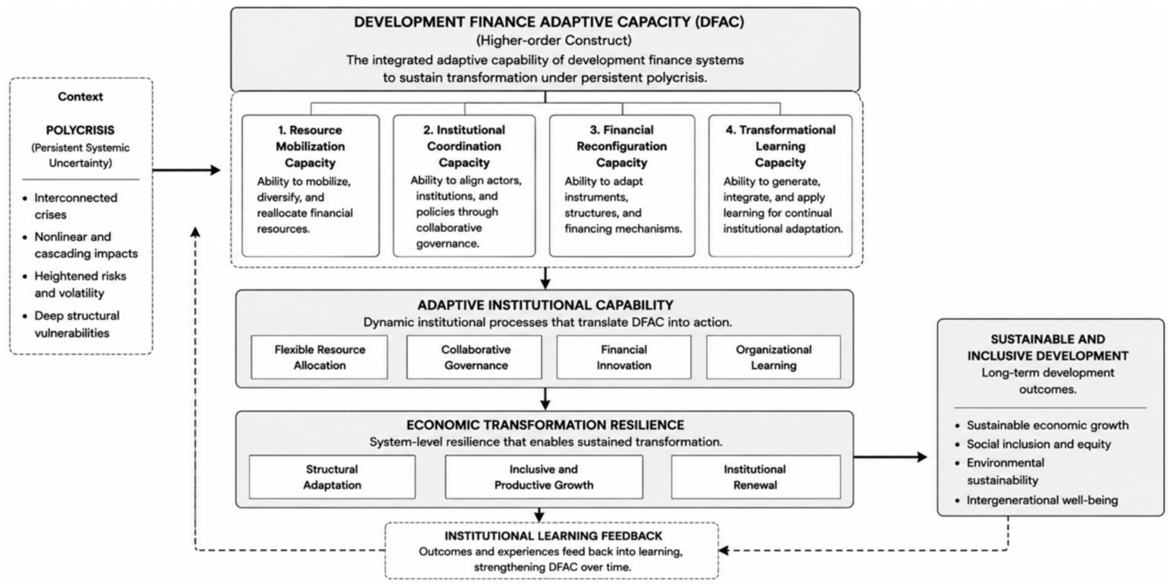

Figure 3. Middle-Range Theory of Development Finance Adaptive Capacity
Source: Developed by the authors based on the proposed DFAC middle-range theory.

Figure 3 presents the complete middle-range theory by integrating the antecedent context, the higher-order DFAC construct, its constituent dimensions, adaptive institutional capability, and the resulting developmental outcomes. The framework emphasizes that resilience emerges through continuous institutional adaptation rather than financial expansion alone, while the feedback loop illustrates how accumulated learning reinforces adaptive capability across successive polycrisis episodes, strengthening long-term transformation.

The framework advances development finance theory in three ways. First, it redefines development finance as an adaptive institutional capability rather than a passive financing mechanism. Second, it integrates previously fragmented literatures on finance, resilience, adaptive governance, and polycrisis into a coherent explanatory model. Third, it provides a theoretically grounded set of constructs and propositions that are sufficiently specific for empirical testing while remaining broad enough to inform policy design across diverse national contexts.

As a middle-range theory, DFAC does not seek to replace existing finance–growth theories. Instead, it complements them by explaining the adaptive mechanisms through which development finance remains effective in an increasingly uncertain global environment. In doing so, the theory offers a conceptual bridge between the historical objective of promoting economic development and the contemporary imperative of sustaining transformation under persistent polycrisis.

5. Theoretical and Policy Implications

The proposed Development Finance Adaptive Capacity (DFAC) framework contributes to the development finance literature by shifting the analytical focus from financial resource availability to the adaptive capabilities of financial systems operating under conditions of persistent uncertainty. Rather than conceptualizing development finance solely as a mechanism for mobilizing investment or correcting market failures, the framework emphasizes its dynamic role in enabling institutional adaptation, coordinating diverse stakeholders, and sustaining long-term structural transformation. This perspective becomes increasingly relevant as contemporary development challenges are characterized not by isolated crises but by interconnected and mutually reinforcing disruptions that continuously reshape development priorities.

5.1 Theoretical Implications

The first theoretical contribution of this study is the extension of the traditional finance–growth paradigm. Classical theories have convincingly demonstrated that financial development promotes economic growth through improved capital allocation, investment efficiency, and financial intermediation (Beck *et al.*, 2000; King & Levine, 1993; Levine, 1997). However, these perspectives were largely developed under assumptions of relatively stable institutional and macroeconomic environments. The DFAC framework complements rather than replaces these theories by arguing that the effectiveness of development finance increasingly depends on its adaptive capability to respond to systemic uncertainty. In this sense, adaptive capacity becomes an additional explanatory mechanism linking finance and development under polycrisis conditions.

Second, the framework bridges several previously fragmented research streams. Existing scholarship on development finance, financial resilience, climate finance, digital finance, adaptive governance, and economic resilience has expanded rapidly during the past decade, particularly following the COVID-19 pandemic and the growing recognition of climate-related financial risks (Giglio *et al.*, 2021; Hou *et al.*, 2023; Kuhl & Shinn, 2022; Lawrence *et al.*, 2024). Nevertheless, these literatures have generally evolved independently, each emphasizing specific sectors, financial instruments, or institutional arrangements. DFAC provides an integrative conceptual framework that connects these perspectives through a common adaptive mechanism, thereby offering a more coherent explanation of development finance in an era of interacting crises.

Third, this article advances resilience theory by introducing economic transformation resilience as the primary developmental outcome of adaptive finance. Much of the resilience literature focuses on the capacity to absorb shocks and restore system functionality. The DFAC framework instead emphasizes resilience as a process of continuous transformation in which financial systems facilitate institutional renewal, structural adjustment, and long-term developmental change. Consequently, resilience is conceptualized not as a return to pre-crisis equilibrium but as the capability to sustain developmental trajectories while adapting to evolving systemic conditions.

Finally, the proposed middle-range theory contributes conceptually by introducing DFAC as a higher-order construct composed of four interrelated dimensions: resource mobilization capacity, institutional coordination capacity, financial reconfiguration capacity, and transformational learning capacity. These dimensions provide a structured foundation for future construct development, scale validation, and empirical testing. Future studies may operationalize DFAC through measurable indicators and examine its influence across countries, sectors, or development finance institutions using comparative or longitudinal research designs.

5.2 Policy Implications

The DFAC framework also offers several important implications for development policy. The first implication concerns the strategic orientation of development finance institutions. National development banks, multilateral development banks, sovereign development funds, and international financial organizations increasingly operate in environments characterized by overlapping economic, environmental, and geopolitical risks. Under such circumstances, institutional effectiveness depends not only on the amount of capital mobilized but also on the capacity to adapt financing priorities, coordinate stakeholders, and redesign financial instruments in response to rapidly changing development challenges.

Second, the framework highlights the importance of institutional coordination as a strategic capability rather than an administrative function. Polycrisis requires governments, central banks, development finance institutions, private investors, and international organizations to act within increasingly interconnected policy environments. Fragmented financing mechanisms may reduce policy effectiveness even when financial resources are sufficient. Strengthening coordination mechanisms across institutions therefore becomes essential for enhancing adaptive responses and minimizing policy inconsistencies.

Third, DFAC suggests that financial innovation should be evaluated according to its contribution to adaptive transformation rather than technological novelty alone. Digital finance, green finance, blended finance, and climate finance represent more than specialized financing instruments; they constitute adaptive mechanisms that enable development finance systems to respond more effectively to evolving risks and opportunities. Consequently, investment in financial innovation should be accompanied by institutional learning, governance reform, and regulatory flexibility to maximize developmental outcomes.

Fourth, the framework underscores the importance of continuous organizational learning within development finance institutions. Repeated crises generate valuable institutional experience that should inform future financing strategies, policy coordination, and risk management. Development finance systems capable of systematically incorporating lessons from previous crises are likely to exhibit greater adaptive capacity and stronger resilience during subsequent disruptions. Accordingly, policy evaluation should move beyond measuring financial outputs toward assessing institutional learning, adaptive governance, and long-term transformation capacity.

5.3 Future Research Directions

Although the proposed theory advances conceptual understanding of development finance under polycrisis, several opportunities remain for future investigation.

First, empirical research is needed to operationalize the DFAC construct. Developing reliable indicators for each of the four proposed dimensions would enable quantitative assessment of adaptive capacity across national development finance systems. Such measurement would facilitate comparative studies examining how adaptive capabilities influence economic transformation resilience under different institutional contexts.

Second, future research may investigate the interaction between DFAC and existing institutional characteristics, including governance quality, financial development, state capacity, and regulatory effectiveness. These factors may function as antecedents, moderators, or enabling conditions that influence the effectiveness of adaptive development finance.

Third, comparative case studies involving national development banks, multilateral development banks, or climate finance institutions could provide deeper insight into how adaptive capabilities evolve over time. Such studies would complement quantitative analyses by identifying institutional processes, policy innovations, and governance mechanisms that cannot easily be captured through macro-level indicators.

Finally, the proposed middle-range theory may be extended by incorporating additional dimensions relevant to emerging development challenges, including digital transformation, artificial intelligence, biodiversity finance, demographic transitions, and geopolitical fragmentation. These developments may reshape adaptive finance in ways that require further theoretical refinement as the nature of polycrisis continues to evolve.

Overall, the DFAC framework should be understood as an evolving theoretical foundation rather than a definitive explanation of development finance under polycrisis. Its primary value lies in providing an integrative conceptual architecture that connects established theories of finance and development with emerging research on resilience, adaptation, and systemic transformation. By doing so, the framework establishes a coherent platform for future theoretical advancement, empirical validation, and evidence-based policy innovation.

6. Conclusion

This study addressed an important gap in the development finance literature by arguing that existing theoretical perspectives remain insufficient to explain how development finance systems operate under conditions of polycrisis, where economic, environmental, geopolitical, and technological disruptions interact simultaneously and reshape development trajectories. Although previous studies have substantially advanced understanding of finance, resilience, and sustainable development, limited attention has been devoted to the adaptive mechanisms through which development finance supports long-term economic transformation amid persistent systemic uncertainty.

To address this gap, this article developed a middle-range theory centered on Development Finance Adaptive Capacity (DFAC). The proposed framework reconceptualizes development finance as an adaptive institutional capability rather than merely a mechanism for mobilizing financial resources. By integrating insights from development finance, adaptive capacity, resilience, and polycrisis research, the study advances a coherent conceptual explanation of how resource mobilization, institutional coordination, financial reconfiguration, and transformational learning collectively strengthen economic transformation resilience. In doing so, the framework extends existing development finance theory beyond financial intermediation toward adaptive institutional dynamics.

The proposed framework also offers practical implications for governments, development banks, and international development organizations. It suggests that the effectiveness of development finance should be assessed not only by the scale of financial resources mobilized but also by the ability of institutions to coordinate stakeholders, redesign financing mechanisms, and continuously learn and adapt to evolving crises. Strengthening these adaptive capabilities is likely to become increasingly important for sustaining inclusive and resilient economic transformation in an increasingly uncertain global environment.

As a conceptual study, this article has several limitations. The proposed framework has not yet been empirically validated, and the relationships among its constructs remain theoretical. Future research should therefore operationalize the DFAC construct, examine the proposed propositions across different institutional settings, and investigate how adaptive capabilities evolve over time through comparative and longitudinal studies. Such efforts will help refine the proposed framework and establish its explanatory power across diverse development contexts.

Overall, this study argues that the future effectiveness of development finance depends not only on expanding financial resources but also on strengthening the adaptive capabilities of the institutions responsible for mobilizing and allocating them. By introducing Development Finance Adaptive Capacity as a middle-range theoretical framework, this article provides a new conceptual lens for understanding how development finance can sustain economic transformation under conditions of polycrisis. It is expected that the proposed framework will stimulate further theoretical development, empirical validation, and policy innovation, thereby contributing to a more adaptive, resilient, and transformative paradigm of development finance.

References

Allen, F., Demirguc-Kunt, A., Klapper, L., & Martinez Peria, M. S. (2016). The foundations of financial inclusion: Understanding ownership and use of formal accounts. *Journal of Financial Intermediation*, *27*, 1–30. https://doi.org/10.1016/j.jfi.2015.12.003

Allen, F., & Gale, D. (2000). Financial Contagion. *Journal of Political Economy*, *108*(1), 1–33. https://doi.org/10.1086/262109

Beck, T., Demirgüç-Kunt, A., & Levine, R. (2007). Finance, inequality and the poor. *Journal of Economic Growth*, *12*(1), 27–49. https://doi.org/10.1007/s10887-007-9010-6

Beck, T., Demirgüç-Kunt, A., & Maksimovic, V. (2005). Financial and Legal Constraints to Growth: Does Firm Size Matter? *The Journal of Finance*, *60*(1), 137–177. https://doi.org/10.1111/j.1540-6261.2005.00727.x

Beck, T., Levine, R., & Loayza, N. (2000). Finance and the sources of growth. *Journal of Financial Economics*, *58*(1–2), 261–300. https://doi.org/10.1016/S0304-405X(00)00072-6

Cerutti, E., Claessens, S., & Laeven, L. (2017). The use and effectiveness of macroprudential policies: New evidence. *Journal of Financial Stability*, *28*, 203–224. https://doi.org/10.1016/j.jfs.2015.10.004

Christelis, D., Georgarakos, D., & Jappelli, T. (2015). Wealth shocks, unemployment shocks and consumption in the wake of the Great Recession. *Journal of Monetary Economics*, *72*, 21–41. https://doi.org/10.1016/j.jmoneco.2015.01.003

Demirgüç-Kunt, A., Pedraza, A., & Ruiz-Ortega, C. (2021). Banking sector performance during the COVID-19 crisis. *Journal of Banking & Finance*, *133*, 106305. https://doi.org/10.1016/j.jbankfin.2021.106305

Dikau, S., & Volz, U. (2021). Central bank mandates, sustainability objectives and the promotion of green finance. *Ecological Economics*, *184*, 107022. https://doi.org/10.1016/j.ecolecon.2021.107022

Ding, W., Levine, R., Lin, C., & Xie, W. (2021). Corporate immunity to the COVID-19 pandemic. *Journal of Financial Economics*, *141*(2), 802–830. https://doi.org/10.1016/j.jfineco.2021.03.005

Fahlenbrach, R., Rageth, K., & Stulz, R. M. (2021). How Valuable Is Financial Flexibility when Revenue Stops? Evidence from the COVID-19 Crisis. *The Review of Financial Studies*, *34*(11), 5474–5521. https://doi.org/10.1093/rfs/hhaa134

Flammer, C. (2021). Corporate green bonds. *Journal of Financial Economics*, *142*(2), 499–516. https://doi.org/10.1016/j.jfineco.2021.01.010

Giglio, S., Kelly, B., & Stroebel, J. (2021). Climate Finance. *Annual Review of Financial Economics*, *13*(1), 15–36. https://doi.org/10.1146/annurev-financial-102620-103311

Haldane, A. G., & May, R. M. (2011). Systemic risk in banking ecosystems. *Nature*, *469*(7330), 351–355. https://doi.org/10.1038/nature09659

Hou, S., Zhang, Y., & Song, L. (2023). Digital finance and regional economic resilience: Evidence from 283 cities in China. *Heliyon*, *9*(10), e21086. https://doi.org/10.1016/j.heliyon.2023.e21086

Hu, X., Li, L., & Dong, K. (2022). What matters for regional economic resilience amid COVID-19? Evidence from cities in Northeast China. *Cities*, *120*, 103440. https://doi.org/10.1016/j.cities.2021.103440

King, R. G., & Levine, R. (1993). Finance and Growth: Schumpeter Might Be Right. *The Quarterly Journal of Economics*, *108*(3), 717–737. https://doi.org/10.2307/2118406

Kuhl, L., & Shinn, J. (2022). Transformational adaptation and country ownership: competing priorities in international adaptation finance. *Climate Policy*, *22*(9–10), 1290–1305. https://doi.org/10.1080/14693062.2022.2104791

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1997). Legal Determinants of External Finance. *The Journal of Finance*, *52*(3), 1131–1150. https://doi.org/10.1111/j.1540-6261.1997.tb02727.x

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1998). Law and Finance. *Journal of Political Economy*, *106*(6), 1113–1155. https://doi.org/10.1086/250042

Lawrence, M., Homer-Dixon, T., Janzwood, S., Rockström, J., Renn, O., & Donges, J. F. (2024). Global polycrisis: the causal mechanisms of crisis entanglement. *Global Sustainability*, *7*, e6. https://doi.org/10.1017/sus.2024.1

Levine, R. (1997). Financial development and economic growth: Views and agenda. *Journal of Economic Literature*, *2*(35), 688–726.

Levine, R., Loayza, N., & Beck, T. (2000). Financial intermediation and growth: Causality and causes. *Journal of Monetary Economics*, *46*(1), 31–77. https://doi.org/10.1016/S0304-3932(00)00017-9

Pástor, Ľ., Stambaugh, R. F., & Taylor, L. A. (2021). Sustainable investing in equilibrium. *Journal of Financial Economics*, *142*(2), 550–571. https://doi.org/10.1016/j.jfineco.2020.12.011

Shen, J., Yu, J., & Khoso, W. M. (2024). Green finance as a driver for environmental and economic resilience post-COVID-19: A focus on China's strategy. *Heliyon*, *10*(15), e35519. https://doi.org/10.1016/j.heliyon.2024.e35519

Siirilä, J., & Salonen, A. O. (2024). Towards a sustainable future in the age of polycrisis. *Frontiers in Sustainability*, *5*. https://doi.org/10.3389/frsus.2024.1436740

Søgaard Jørgensen, P., Jansen, R. E. V., Avila Ortega, D. I., Wang-Erlandsson, L., Donges, J. F., Österblom, H., Olsson, P., Nyström, M., Lade, S. J., Hahn, T., Folke, C., Peterson, G. D., & Crépin, A.-S. (2024). Evolution of the polycrisis: Anthropocene traps that challenge global sustainability. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *379*(1893). https://doi.org/10.1098/rstb.2022.0261

Tunçalp, D. (2026). Entrepreneurial resilience in polycrisis: Adaptation via improvizational action, institutional workarounds, and strategic reconfiguration. *Journal of Management & Organization*, *32*(3), 758–780. https://doi.org/10.1017/jmo.2025.10040

Wei, N. (2024). Green finance, market integration, and regional economic resilience. *Finance Research Letters*, *67*, 105777. https://doi.org/10.1016/j.frl.2024.105777

Xia, Y., Qiao, Z., & Xie, G. (2022). Corporate resilience to the COVID-19 pandemic: The role of digital finance. *Pacific-Basin Finance Journal*, *74*, 101791. https://doi.org/10.1016/j.pacfin.2022.101791

Zeng, W. (2025). Climate finance and new multilateral development banks: approaching co-productive dynamics? *Climate Policy*, *25*(8), 1117–1130. https://doi.org/10.1080/14693062.2024.2442004

Zhang, J. (2025). Digital economy, green finance, and economic resilience. *PLOS ONE*, *20*(2), e0314028. https://doi.org/10.1371/journal.pone.0314028