

Evolution of Financial Risk Management in Digital Multinational Enterprises: A Literature Review and Theoretical Framework from a Dynamic Capability Perspective

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Abstract: In the new stage of globalization driven by digitalization and the Belt and Road Initiative, digital multinational enterprises face new and complex financial risks such as exchange rate fluctuations, data compliance, and cross-border capital flows, challenging traditional static risk management paradigms. Existing research often treats risk management as an adjunct to corporate internationalization or organizational resilience, failing to focus on its dynamic evolution mechanism as a core function. Therefore, this study, based on dynamic capability theory, aims to reveal how digital multinational enterprises evolve their financial risk management systems through a capability cycle of “perception-capture-reconstruction”, driven by both digital technology and strategic orientation, and to explore the moderating role of complex scenarios such as the Belt and Road Initiative. This research aims to expand the application scenarios of dynamic capability theory and provide a theoretical basis and practical guidance for enterprises’ global risk governance.

Keywords: Digital multinational enterprise; Financial risk management; Dynamic capability; Digital transformation; Belt and Road Initiative

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1. Research background and problem statement

The deep integration of the global digital wave and the Belt and Road Initiative has given rise to a new type of market player—the digital multinational enterprise. Relying on data-driven, platform-operated, and global networks, they have achieved unprecedented growth and synergy. However, this new model also brings unique financial risk challenges: high-frequency cross-border capital flow management, global valuation dilemmas of intangible assets, and a surge in compliance costs caused by data sovereignty regulations^[1]. Especially along the Belt and Road Initiative, these new risks, combined with the diverse local institutional environment and imperfect financial infrastructure, constitute an extremely complex and dynamic risk environment^[2]. Obviously, the traditional static risk management paradigm, which focuses on ex-post mitigation, is no longer sufficient to cope with this. Building a risk management capability that can continuously

learn and dynamically adapt has become a core strategic issue for the survival and high-quality development of digital multinational enterprises.

Although there is a wealth of research on corporate internationalization and digital transformation, a key gap lies in the fact that existing literature mostly regards financial risk management as an accompanying activity or implicit result of achieving internationalization strategies or organizational resilience, rather than a core management function with independent evolutionary logic and micro-mechanisms for systematic analysis. For example, some studies focus on how digital transformation promotes internationalization through dynamic capabilities, while others explore the moderating effect of bankruptcy risk on the resilience of digital transformation^[3-4]. However, none of these studies have focused on the dynamic evolution of risk management capabilities themselves, considering the unique financial risk spectrum of digital multinational corporations. Therefore, this study aims to answer a core question: How do digital multinational corporations build and evolve their dynamic financial risk management capabilities to cope with the complex risks in global operations? What key factors drive and regulate this process? Exploring this question will not only help clarify the internal mechanism of risk governance of multinational corporations in the digital age but also have important value for the in-depth application of dynamic capability theory in specific functional areas.

2. Literature review and theoretical gaps

2.1. Research on transnational operations in the background of the “Belt and Road” Initiative

Research on the “Belt and Road” Initiative and transnational operations provides a solid foundation for understanding the macro-institutional environment faced by enterprises. Scholars such as Huang Danhua systematically elaborated on the market opportunities and overall risk profile brought about by the initiative. Geng Yuanyuan also analyzed the challenges and countermeasures faced by Chinese enterprises in operating along the “Belt and Road” from a strategic perspective^[2]. The contribution of these studies lies in clearly defining the characteristics of the external environment and revealing the impact of macro factors such as institutional distance and cultural differences on corporate strategic choices. However, their limitation is that they mostly start from the perspective of macro strategy or market entry, and have not yet delved into the micro-operation level of enterprises, especially failing to reveal the capability-building process of digital enterprises in specific financial risk management practices. The understanding of risk is still relatively general, and there is a lack of targeted deconstruction of financial risks, especially new financial risks spawned by digital technology.

2.2. Research on digital transformation, dynamic capabilities, and corporate strategy

Another important literature explores the relationship between digital transformation, dynamic capabilities, and corporate performance. Wang Molin et al. confirmed that dynamic capabilities are the key intermediary for digital transformation to enhance the international breadth of enterprises and clearly depicted the path of “technology → capability → strategy”^[3]. Chen et al. further found that the bankruptcy risk status of enterprises modulates the empowering effect of digital transformation on organizational resilience, introducing “risk situation” as a key contingency factor^[4]. Meanwhile, international research indicates that enterprises’ digital orientation enhances organizational resilience by cultivating dynamic capabilities^[5]. The outstanding contribution of these studies lies in establishing the core position of dynamic capabilities in connecting digital technology and strategic outcomes, and in beginning to focus on the moderating effect of the situation, providing a powerful framework for understanding organizational adaptability.

However, they share a common limitation: they fail to focus on analyzing “financial risk management” itself as an independent and professional dynamic capability evolution object. Specifically, firstly, many studies treat risk response as one of the “results” of dynamic capabilities, but fail to deconstruct the behavioral performance, evolutionary sequence, and micro-foundations of capabilities under the specific threat of financial risk. Secondly, they relatively neglect the strategic guiding role of top-level digital orientation in enterprises, failing to explain how strategic cognition shapes the depth and direction of digital transformation in risk management. Finally, a dedicated analytical framework has not yet been fully

developed to address the unique and evolving spectrum of new financial risks inherent in digital multinational corporations (such as platform fund pool risk, cross-border data flow taxation risk, and digital currency settlement risk), resulting in a disconnect between theoretical explanations and emerging practices.

3. Theoretical advancement and integration framework of this study

To address the theoretical gaps, this study aims to advance the theoretical framework at three levels and construct an integrated analytical framework.

3.1. Theoretical focus: Proposing a specialized construct of “financial risk management dynamic capabilities”

This study is the first to explicitly propose and systematically analyze “Financial Risk Management Dynamic Capabilities” (FRMDCs). This aims to deepen and anchor the classic dynamic capability theory (perception, capture, reconstruction) from the perspective of explaining macro-strategic choices and general organizational resilience to the professional functional area of financial management ^[3]. In a financial risk context, this capability manifests itself in several ways: Enterprises can leverage big data, AI-powered sentiment monitoring, and other methods to conduct real-time, accurate scanning and early warning of exchange rates, regulatory policies, and market credit risks across multiple countries (perception). This process transcends traditional financial statement analysis, relying on the ability to process unstructured data streams instantly. They can also rapidly integrate internal and external resources, such as introducing blockchain technology to optimize cross-border payments or collaborating with fintech companies to develop intelligent hedging tools (capture), demonstrating their ability to acquire and integrate key knowledge resources within an open and innovative ecosystem. Furthermore, based on risk insights, they can flexibly adjust their global fund management architecture, risk control processes, and organizational responsibilities, such as establishing regional intelligent financial platforms to achieve agile strategy iteration (restructuring). This requires organizations to possess the transformative power to break down departmental barriers and reshape management practices. Through this concrete manifestation, we can more accurately reveal the micro-foundations of FRMDCs’ evolution, thereby pushing the application of dynamic capability theory to deeper functional practices.

3.2. Driving mechanism: Constructing a dual-driven model of “digital orientation-digital transformation”

It is emphasized that the evolution of FRMDCs is driven by two engines: digital transformation provides the necessary technical tools and data foundation, which is the source of “possibility” for achieving a leap in capabilities; while digital orientation refers to the organization’s core belief and long-term commitment to the strategic value of digital technology, which is the “leading force” that determines the direction, priority and sustainability of technology investment ^[5]. A company that only invests in technology but lacks a strong digital orientation may have its risk management digitalization become a fragmented tool application, with each department independently introducing systems but finding it difficult to communicate with each other, and unable to form a global risk view; conversely, if there are only strategic slogans but no solid technical transformation support, capability evolution cannot be implemented, and risk control decisions still rely on experience and intuition. Therefore, construct a dual-driven model of “cognitive leadership (digital orientation) — technology empowerment (digital transformation).” This model emphasizes that the two complement each other and jointly determine the depth, systematizations and sustainability of the evolution of FRMDCs. Digital orientation provides legitimacy for continuous digital transformation investment and guides it to focus on core risk challenges; while successful digital transformation practices, in turn, strengthen the organization’s digital orientation, forming a positive feedback loop.

3.3. Contextual model: A two-layer regulation integrating “risk exposure level” and “institutional complexity”

The evolutionary path is deeply influenced by the context. This study proposes a two-layer regulation model to more precisely characterize boundary conditions. The inner layer regulation focuses on the “financial risk exposure level” of enterprises. It draws on the ideas of Chen Junhua et al. but is more specific, referring to the real-time financial risk pressure faced by enterprises (such as the size of foreign exchange exposure, the proportion of high-volatility market assets, and short-term debt repayment pressure)^[4]. The author infers that moderate risk exposure may incentivize enterprises to actively invest in the construction of FRMDCs, regarding it as an important strategic investment; while extreme high pressure may trigger short-term decision “rigidity”, with management tending to adopt conservative and familiar coping methods, suppressing deep digital transformation that requires time and resources, and even suspending long-term capacity building projects to ensure short-term survival. The outer layer of regulation focuses on the “institutional complexity of the Belt and Road Initiative”, which is not only a higher traditional risk, but also signifies a fundamental shift in risk management logic—from pursuing internal technical efficiency to taking into account external social legitimacy and institutional embedding^[1]. In this context, the “reconstruction” capability in FRMDCs must include social skills for building trust with local regulatory agencies, financial institutions, and community leaders, and adapting to informal rules, such as by participating in the host country’s regulatory sandbox, adopting a hybrid cloud architecture that complies with local data regulations, or hiring local senior compliance consultants to obtain operational legitimacy. This institutional complexity requires that the enterprise’s risk control system is not only “intelligent” but also “contextually intelligent.”

4. Integration framework and research propositions

Based on the above discussion, this paper proposes an integration framework. Its core logic is that the evolution of FRMDCs of digital multinational enterprises is led by digital orientation, empowered by digital transformation, and operates through a “perception-capture-reconstruction” cyclical mechanism. The intensity and path of this evolutionary process are simultaneously influenced by the dual contexts of enterprises’ “financial risk exposure level” (intensity and urgency adjustment) and “the institutional complexity of the Belt and Road Initiative” (direction and connotation adjustment). The ultimate goal is to form an intelligent risk control paradigm that combines efficiency and legitimacy to support organizational resilience. Based on this framework, several verifiable research propositions can be derived, such as: Proposition 1: The intensity of enterprises’ digital orientation positively modulates the empowering effect of digital transformation on FRMDCs; Proposition 2: The institutional complexity of markets along the Belt and Road Initiative positively modulates the social construction dimension of “reconstruction” capabilities in FRMDCs; Proposition 3: The relationship between enterprises’ financial risk exposure level and the evolution speed of FRMDCs exhibits an inverted U-shaped relationship (moderate pressure promotes, extreme pressure inhibits). These propositions provide clear directions for subsequent empirical research.

5. Research methodology

To deeply reveal the complex process mechanisms of “how it evolves” and “how the context plays a role”, this study plans to adopt a multi-case comparative research method. It plans to select 3-4 Chinese digital multinational enterprises with in-depth operations along the Belt and Road Initiative, and that have experienced typical financial risk events as case studies. Case studies will cover different models, including platform-based and product-based models, to explore heterogeneity. For example, a large cross-border e-commerce platform, a smart hardware manufacturer, and a fintech service provider could be selected. Data collection will employ a triangulation method: systematically analyzing corporate annual reports, social responsibility reports, and management discussion and analysis (MD&A) texts to trace the evolution of their

digitally oriented statements, key event narratives of digital transformation, and descriptions of responses to specific risk events; collecting relevant financial and market data to quantify their risk exposure levels; and conducting semi-structured interviews with the company's CFO, treasurer, head of international business, and risk and compliance officer to obtain firsthand insights into the decision-making process, capability building challenges, and situational responses. Data analysis will follow a replication logic, first conducting in-depth longitudinal process tracking for each case, depicting the key evolution nodes of its FRMDCs at different development stages; then conducting systematic cross-case comparisons to identify the commonalities and differences in capability evolution paths under different risk scenarios and combinations of driving factors, thereby verifying, revising, and enriching the aforementioned theoretical propositions.

6. Conclusions and future prospects

This paper, through a literature review, clarifies the significant theoretical value of focusing on dynamic capability theory on the evolution of the professional function of financial risk management. By proposing the specialization construct of FRMDCs and constructing a dual-driven model and a two-layered situational adjustment model, this study not only provides more refined and situation-sensitive analytical tools for understanding the risk governance of digital multinational corporations in a complex global environment, but also promotes the scenario-based development of dynamic capability theory towards specific management functions, responding to the new requirements of organizational capability theory in the digital age. Future research could build upon this foundation to further develop measurement scales for FRMDCs and conduct quantitative empirical tests using large-sample panel data to more generally verify the driving and moderating relationships proposed in this paper; or conduct cross-cultural and cross-national comparative case studies to explore the similarities and differences in the evolution paths of financial risk management capabilities of digital multinational corporations under different national institutional backgrounds and market environments, thereby enriching the theoretical insights of comparative management.

Disclosure statement

The author declares no conflict of interest.

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