The Logic and Prospects of China' s Digital Finance Development: A Postprint

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Abstract

Abstract

[**Purpose/Significance**] Against the backdrop of expanding data factor scales, the accelerated evolution of digital technologies, and the profound transformation of the financial system, China' s digital finance has demonstrated a leapfrog growth trend; however, its internal driving mechanisms still require systematic clarification. Grounded in China' s practical realities and drawing on cutting-edge literature, this paper aims to reveal the fundamental drivers of the rapid development of digital finance in China, providing a theoretical basis for understanding its evolutionary logic.

[**Method/Process**] Using the "FinTech Tree" as an analytical framework and employing a combination of literature review and theoretical analysis, this study systematically analyzes the key factors driving the development of digital finance in China from three dimensions: market environment, technological conditions, and institutional arrangements.

[**Result/Conclusion**] The research indicates that the ultra-large-scale market, combined with the constraints of the traditional financial system, has jointly generated a massive demand for financial services. A new generation of digital technologies, including machine learning and deep learning, has driven the digital transformation of financial institutions and enhanced the accessibility of financial services by reshaping information processing methods and resource allocation logic. Meanwhile, government policies have achieved a dynamic balance between promoting innovation and preventing risks, serving as an important guarantee for the leapfrog development of digital finance. Looking forward to the "15th Five-Year Plan" period, China' s digital finance will move toward a higher-quality and more sustainable stage of development.

Full Text

Preamble

· Research and Interpretation of the Spirit of the Third Plenary Session of the 20th CPC Central Committee · To deeply study and implement the spirit of the Third Plenary Session of the 20th CPC Central Committee, the *Journal of Library and Data Science*, grounded in the characteristics of the Information Resource Management discipline, has organized and published a special article titled "The Logic and Prospects of China' s Digital Finance Development." Digital finance represents one of the most significant application scenarios for the deep empowerment of data elements and the efficient allocation of information resources. From the three dimensions of market environment, technical conditions, and institutional arrangements, this article systematically analyzes the internal drivers of the leapfrog development of China' s digital finance. It reveals the critical role of data resources and digital technologies in the evolution of the financial system, providing an interdisciplinary analytical perspective for understanding the developmental transformations of China' s digital finance during the "15th Five-Year Plan" period. This journal will continue to cultivate research in literature, data, and related cross-disciplinary fields, launching more research results that closely align with contemporary themes and highlight disciplinary characteristics, thereby contributing to the accelerated construction of an independent knowledge system for Chinese philosophy and social sciences.

The Logic and Prospects of China' s Digital Finance Development Dong Yun, Wang Yong (Institute of Finance, Chinese Academy of Social Sciences, Beijing)

摘要

Introduction

[Purpose/Significance] Against the backdrop of the expanding scale of data elements, the accelerated evolution of digital technologies, and the profound transformation of the financial system, China' s financial industry is undergoing a paradigm shift. Data has become a core production factor, driving innovation and efficiency across various financial sectors. This study aims to explore the mechanisms through which digital transformation and data integration reshape financial services and risk management.

[Figure 1: see original paper]

1.1 Background and Context

The rapid development of machine learning and deep learning has provided the financial sector with unprecedented analytical capabilities. As financial institutions transition from traditional models to data-driven architectures, the ability to process vast amounts of unstructured data has become a critical competitive

advantage. This evolution is not merely technological but represents a fundamental change in how financial value is created and distributed.

1.2 The Role of Data Elements

In the current economic landscape, data elements are increasingly recognized as a primary driver of productivity. Unlike traditional factors of production, data exhibits unique characteristics such as non-rivalry and increasing returns to scale. Within the financial system, the integration of multi-dimensional data —ranging from transaction histories to social media sentiment—enables more accurate credit scoring, personalized wealth management, and real-time fraud detection.

The synergy between digital technology and financial services is particularly evident in the deployment of sophisticated algorithms. For instance, the application of $\mathcal{F}$ in modeling complex market dynamics allows for a more nuanced understanding of systemic risk. By leveraging $\bar{b}$ and other specialized parameters, researchers can better simulate market stress scenarios and develop robust hedging strategies.

1.3 Digital Transformation in Finance

The deep transformation of the financial system is characterized by the convergence of traditional banking functions with emerging fintech solutions. This process involves the systematic upgrading of legacy infrastructure to support high-frequency data processing and decentralized ledger technologies. As noted in [**?**], the transition to a digital-first approach is essential for maintaining financial stability in an increasingly volatile global market.

[Figure 2: see original paper]

Furthermore, the evolution of digital technology has lowered the barriers to entry for financial services, promoting financial inclusion. However, this shift also introduces new challenges related to data privacy, algorithmic bias, and cybersecurity. Addressing these issues requires a comprehensive regulatory framework that balances innovation with consumer protection, ensuring that the benefits of the digital economy are distributed equitably across society.

摘要

[Purpose/Significance] Against the backdrop of expanding data factors, the accelerated evolution of digital technologies, and the profound transformation of the financial system, China' s digital finance has exhibited a trend of leapfrog growth. However, its internal driving mechanisms still require systematic clarification. Grounded in China' s practical realities and drawing upon cutting-edge literature, this paper aims to reveal the fundamental drivers of the rapid development of digital finance in China, providing a theoretical basis for understanding

its evolutionary logic. [Method/Process] Using the "FinTech Tree" as an analytical framework, this study employs a combination of literature review and theoretical analysis to systematically examine the key factors driving China's digital finance development across three dimensions: market environment, technical conditions, and institutional arrangements. [Results/Conclusion] The research indicates that the combination of a hyper-scale market and the constraints of the traditional financial system has generated a massive demand for financial services. A new generation of digital technologies has driven the digital transformation of financial institutions and enhanced the accessibility of financial services by reshaping information processing methods and resource allocation logic. Simultaneously, government policies have achieved a dynamic balance between promoting innovation and preventing risks, serving as an important guarantee for the leapfrog development of digital finance. Looking forward to the "15th Five-Year Plan" period, China' s digital finance will move toward a higher-quality and more sustainable stage of development.

Moving toward a higher-quality and more sustainable stage of development.

关键词

Digital Finance, Digital Technology, and Ultra-Large-Scale Markets: Financial Digital Transformation and Supervision

The rapid evolution of digital technology is fundamentally reshaping the global economic landscape, with digital finance emerging as a critical driver of modern economic growth. In the context of ultra-large-scale markets, the integration of advanced technologies—such as machine learning, big data analytics, and distributed ledger technology—into the financial sector has accelerated the process of financial digital transformation. This transformation is not merely a technical upgrade but a systemic shift that redefines how financial services are delivered, accessed, and regulated.

The Role of Digital Technology in Financial Transformation

Digital technology serves as the foundational infrastructure for the modern financial ecosystem. By leveraging high-dimensional data and sophisticated algorithms, financial institutions can now achieve unprecedented levels of precision in risk assessment, credit scoring, and personalized service delivery. In ultra-large-scale markets, the sheer volume of data generated by economic activities provides a unique advantage, allowing for the training of more robust machine learning models and the realization of significant economies of scale. This technological synergy facilitates the transition from traditional banking models to agile, data-driven financial platforms.

Dynamics of Ultra-Large-Scale Markets

The concept of an ultra-large-scale market implies a vast consumer base, diverse industrial chains, and complex transactional networks. Within such an environment, digital finance acts as a catalyst for market integration, reducing information asymmetry and lowering transaction costs across geographical and sectoral boundaries. The scale effect inherent in these markets amplifies the impact of digital financial tools, enabling the rapid adoption of mobile payments, digital insurance, and algorithmic trading. However, the complexity of these markets also necessitates a more nuanced understanding of how systemic risks propagate through interconnected digital networks.

Challenges and Strategies for Financial Digital Transformation

While the benefits of financial digital transformation are substantial, the process is fraught with challenges. Legacy systems, data silos, and the "digital divide" present significant hurdles for traditional financial institutions attempting to modernize. Successful transformation requires a strategic alignment of organizational culture, technical capability, and regulatory compliance. Institutions must prioritize the development of secure, scalable architectures that can handle the high-frequency demands of a digital-first economy while ensuring data privacy and cybersecurity.

Evolution of Financial Supervision in the Digital Era

As the boundaries of finance expand through technology, traditional regulatory frameworks face increasing pressure. Financial supervision must evolve from static, compliance-based approaches to dynamic, technology-driven paradigms —often referred to as RegTech (Regulatory Technology) and SupTech

关键词

Digital Finance, Digital Technology, and Ultra-Large-Scale Markets: Financial Digital Transformation and Supervision

Abstract

The rapid evolution of digital technology is fundamentally reshaping the global economic landscape, with digital finance emerging as a critical driver of modern economic growth. In the context of ultra-large-scale markets, the digital transformation of the financial sector presents both unprecedented opportunities for efficiency and complex challenges for systemic stability. This paper explores the synergistic relationship between digital technology and financial services, analyzing how the scale effects of expansive markets accelerate innovation while necessitating robust financial supervision frameworks. We examine the mechanisms through which financial digital transformation enhances resource allocation and discuss the imperative for adaptive regulatory strategies to mitigate

emerging digital risks.

1. Introduction

The integration of digital technology into the financial sector has transitioned from marginal efficiency improvements to a fundamental structural overhaul. Digital finance, characterized by the application of big data, cloud computing, artificial intelligence, and blockchain, has become a cornerstone of the modern economy. For economies characterized by ultra-large-scale markets, the depth and breadth of financial digital transformation are amplified by network effects and vast data resources. However, this rapid evolution also introduces new dimensions of risk, requiring a sophisticated approach to financial supervision that balances innovation with security.

2. Digital Technology as a Catalyst for Financial Evolution

Digital technology serves as the underlying infrastructure for the contemporary financial system. By reducing information asymmetry and transaction costs, technologies such as machine learning and distributed ledger technology enable financial institutions to provide more personalized and accessible services. In an ultra-large-scale market, the marginal cost of expanding these digital services approaches zero, allowing for rapid scaling that was previously impossible under traditional banking models. This technological shift is not merely an additive change but a transformative process that redefines the boundaries of financial intermediation.

3. Financial Digital Transformation in Ultra-Large-Scale Markets

The concept of an ultra-large-scale market provides a unique environment for financial digital transformation. The sheer volume of users and the diversity of economic activities generate a "data ocean" that fuels the refinement of financial algorithms.

- **Scale Effects and Innovation:** The vast consumer base allows for the rapid testing and deployment of new financial products, leading to faster iteration cycles.
- **Inclusivity:** Digital finance lowers the barriers to entry, providing underserved populations in large markets with access to credit, insurance, and investment vehicles.
- **Efficiency Gains:** Automated processing and AI-driven risk assessment streamline operations, significantly enhancing the overall efficiency of capital distribution

1. Implementing the Spirit of the Fourth Plenary Session of the 20th CPC Central Committee and Grasping the Logic of China' s Digital Financial Development

The "15th Five-Year Plan" period represents a critical phase for laying a solid foundation and exerting full momentum toward the basic realization of socialist modernization. The Fourth Plenary Session of the 20th CPC Central Committee has outlined a series of strategic deployments across all sectors and aspects of economic and social development for this period. We must approach these developments from a global perspective.

We must thoroughly grasp the spirit of the Plenary Session and approach its various strategic deployments as a cohesive whole. Within this framework, the development of digital finance serves both as a critical component for accelerating the construction of a strong financial system and as a vital driver for high-quality economic development.

Developing digital finance is a critical task for our nation and an essential component of advancing the "Digital China"initiative. We must adhere to a systemic perspective and comprehensively grasp the strategic deployment regarding digital finance as outlined in the Plenary Session.

From a financial perspective, the Third Plenary Session of the 20th Central Committee of the Communist Party of China established "accelerating the construction of a strong financial nation" as the strategic goal for financial work during the "15th Five-Year Plan" period. Within the overarching strategy for building a strong financial nation, particular emphasis was placed on "vigorously developing technology finance, green finance, inclusive finance, pension finance, and digital finance." Among these "five major articles," digital finance serves as the essential path for driving financial transformation, grounded in data elements and supported by digital technology; it also acts as the cornerstone for the other four areas. By promoting the digital transformation of the financial industry, digital finance has become the core engine driving quality and efficiency improvements in technology, green, inclusive, and pension finance, thereby facilitating the coordinated synergy of the "five major articles."

From a digital perspective, the Third Plenary Session of the 20th Central Committee of the Communist Party of China identified the deep advancement of the "Digital China"initiative as a critical lever for accelerating high-level self-reliance in science and technology and leading the development of new quality productive forces. In addition to deploying key tasks such as improving the fundamental systems for data elements and accelerating innovation in digital-intelligent technologies like Artificial Intelligence (AI), the Plenary Session proposed the comprehensive implementation of the "AI Plus" action plan. This initiative aims to seize the commanding heights of AI industrial applications and provide comprehensive empowerment across all sectors of the economy. Finance serves as the lifeblood of the national economy and is a vital component of national core competitiveness; therefore, empowering the financial industry with digital-

intelligent technology and stimulating financial development through data elements is clearly an indispensable and crucial link within the "AI Plus" action plan.

From the strategic deployments outlined in the Plenary Session, it is evident that digital finance sits at the intersection of two major national strategies: the construction of a financial powerhouse and the development of a Digital China. Consequently, it possesses significant strategic value. Historically, the evolution of modern finance has been inseparable from the robust support of emerging technologies. Throughout successive industrial revolutions, the financial sector has consistently served as a primary application field for new technologies; indeed, the history of financial development is a history of technology continuously transforming the industry.

Looking at the present and toward the future, data elements are increasingly becoming core, critical factors of production. As a general-purpose technology, digital technology—represented by artificial intelligence—is driving a new round of scientific and industrial transformation. This shift will inevitably lead data elements to permeate every stage of financial development. By fully mining the rich information embedded within data elements, digital technology is expected to generate multiple positive effects, including cost reduction, efficiency enhancement, the mitigation of information asymmetry, and risk diversification. These advancements will reshape the development model of the financial industry, bolster the overall competitiveness of China' s financial sector, and provide more diverse scenarios for the construction of a Digital China. Therefore, promoting the high-quality development of digital finance during the "15th Five-Year Plan" period is of profound significance.

From a practical perspective, the integration of finance with data elements and digital technologies in China has accelerated significantly since the beginning of the new era. Following more than a decade of rapid growth, the development level of China' s digital finance has joined the world' s leading ranks, particularly in fields such as mobile payments and digital credit. Academic circles, both domestically and internationally, have conducted extensive research on this rapid development. However, most existing literature focuses on narrow entry points, utilizing mathematical models or econometric analysis to discuss specific aspects of the driving mechanisms behind China' s digital finance—such as market scale, digital technology, scenario innovation, or regulatory frameworks.

To fully implement the spirit of the Third Plenary Session of the 20th CPC Central Committee and vigorously develop digital finance during the "15th Five-Year Plan" period, this paper builds upon the logic, methodologies, and perspectives of existing research while remaining grounded in the specific realities of contemporary China. This study is characterized by the interdisciplinary integration of financial and data sciences. Specifically, it treats data resources as the foundational element and digital technology as the key support···

Using financial development as a specific context, this paper systematically

grasps the underlying logic behind the rapid growth of China' s digital finance in the new era and offers a forward-looking perspective on its development over the next five years. Furthermore, this study seeks to clarify two fundamental questions: First, looking back at the path already traveled, how has Chinese digital finance managed to achieve "corner-crossing" acceleration and secure a leading global position during this new era? Second, looking toward the future, what new landscape will the development of China' s digital finance reveal?

Scholars from the Bank for International Settlements (BIS) have proposed the "Fintech Tree" conceptual framework by comparing fintech policies across 31 countries and regions, providing a valuable analytical tool for studying the rapid development of digital finance in China. This paper draws upon the "Fintech Tree" framework to review and categorize the existing literature.

According to this framework, the developmental state of fintech (or digital finance) depends on three categories of factors. First are the market transactions and the underlying supply and demand, which represent the "treetop." A massive volume of transactions signifies lush foliage and serves as a distinct hallmark of a flourishing digital finance ecosystem. Second are the key core digital technologies that serve as the "trunk." Decisive breakthroughs in tackling key core technologies in the digital realm provide continuous momentum for the expansion of digital finance. Third are the government policies and regulatory systems that function as the "roots." Institutions and policies characterized by high adaptability, foresight, and strong enforcement provide a behavioral framework with aligned rights and responsibilities and compatible incentives and constraints. By ensuring "deep roots," these policies promote "abundant leaves." These three components are closely interlinked, forming a systematic and integrated whole.

Drawing upon the conceptual framework of the "Fintech Tree," this paper examines key phenomena within China' s digital finance practices across three dimensions: market scale, technological transformation, and government policy. By integrating cutting-edge domestic and international literature with empirical observations of the Chinese landscape, this study explores the theoretical logic underlying the rapid growth of digital finance in China. Furthermore, the paper provides a preliminary outlook on the development prospects of China' s digital finance sector during the "15th Five-Year Plan" period, accounting for recent shifts in the current environment.

The primary references for this study consist of articles from authoritative academic journals and reports from major international organizations. These include prominent journals such as *Social Sciences in China*, *Economic Research Journal*, *China Industrial Economics*, and *China Economic Quarterly*, as well as international titles like the *Journal of Financial Economics*, *The Review of Financial Studies*, and the *American Economic Review*. Additionally, research reports from the Bank for International Settlements (BIS), the International Monetary Fund (IMF), and the National Bureau of Economic Research (NBER) were consulted. The author systematically searched these sources for literature

containing keywords such as "fintech," "digital finance," "digital inclusive finance," "data," and "digital" in the titles or abstracts. Based on citation frequency, download volume, and academic impact, 40 core papers were selected as the primary references to ensure a rigorous and reliable theoretical foundation for this study.

2 市场规模与需求拉动型数字金融发展模式

Since the beginning of the reform and opening-up era, China has been committed to resolving the mismatch between financial resource allocation and the needs of the real economy. This issue primarily manifests in the fact that the traditional financial system—driven by risk preferences, regulatory constraints, and cost structures—tends to favor large-scale corporate sectors and high-income groups characterized by high information transparency. Conversely, small and micro-enterprises, individual industrial and commercial households, rural residents, and emerging industrial entities, which constitute the vast majority of economic actors, generally suffer from restricted financing channels and limited accessibility to financial services. This indicates that a significant volume of authentic financial demand has long remained in a "suppressed" state, failing to be met through the formal financial system.

Against this backdrop, the development of digital finance has enabled the identification, assessment, and pricing of demands that were previously excluded due to small scale, insufficient information, or a lack of collateral [**?**]. This massive latent demand has provided a powerful impetus for the growth of digital finance in China. Beginning with mobile payments, Chinese digital finance has gradually extended into wealth management, credit financing, and comprehensive financial services, forming an endogenous expansion path consisting of "transaction-data-

credit-financing" [**?**]. This evolutionary mechanism—which originates from meeting financial service demands, utilizes data accumulation as an intermediary, and centers on credit creation—has allowed China' s digital finance to maintain strong sustainability alongside its rapid scale expansion.

2.1 超大规模市场与"长尾"需求的释放

Since the reform and opening-up, China has developed a vast but highly heterogeneous demand for financial services, encompassing small and micro-enterprises (SMEs), individual industrial and commercial households, rural residents, and low-income urban groups. Constrained by the cost structures and risk-pricing logic of the traditional financial system, these groups were excluded from the mainstream financial service system for a considerable period, resulting in widespread and persistent financial exclusion [**?**, **?**]. In other words, financial institutions within the traditional system prioritized the allocation of resources to large enterprises, the state-owned sector, and high-net-worth clients. Meanwhile, the "long-tail" groups—which are numerically dominant

but small in individual scale—struggled to obtain effective financial support due to the prohibitively high costs of risk assessment.

By leveraging the mobile internet, big data, and platform-based operations, digital finance has significantly reduced both the average and marginal costs of financial services. This enables financial service providers to expand their coverage to massive, dispersed customer groups while ensuring commercial sustainability. In this sense, Chinese digital finance has not created entirely new financial demands; rather, it has used technological means to activate and release long-suppressed long-tail demand, allowing these groups to enter the formal financial system. Relevant empirical literature has identified a significant "compensation effect" in the development of China' s digital finance. Specifically, in regions where traditional financial infrastructure is relatively weak and physical branch coverage is insufficient, digital finance has exhibited higher growth rates and usage intensity. Mainstream finance literature suggests that the key to activating long-tail demand lies in mitigating information asymmetry. Because SMEs and low-income groups often lack standardized financial statements, stable collateral assets, and comprehensive credit records, traditional banks find it difficult to perform effective risk pricing, leading to prevalent credit rationing. Digital finance addresses this by introducing big data risk control technologies that utilize "soft information" —such as e-commerce transaction records, payment flows, logistics information, and online behavioral data—to effectively substitute for the "hard information" relied upon by traditional finance. This allows for the construction of quantifiable digital credit profiles for long-tail groups lacking traditional credit histories (i.e., "credit invisible" individuals). The development of digital finance has significantly improved credit accessibility for households and enterprises, with a particularly pronounced impact on SMEs and farmers who lack collateral [**?**]. These studies indicate that the widespread application of digital technology in the financial industry can alleviate information constraints, transforming potential demand—previously unfeasible due to information asymmetry—into tradable and priceable financial demand.

Rooted in China' s practical context, the country' s ultra-large-scale market has provided digital finance with abundant data and sustained economies of scale. Based on two-sided market theory, digital finance platforms simultaneously connect users and merchants; the value of these platforms increases non-linearly as the number of participants grows, exhibiting clear network externalities. A larger user base provides the platform with richer data, leading to more accurate risk identification and pricing models and lower unit service costs. This, in turn, attracts more users and merchants, creating a positive feedback loop. China possesses the world' s largest population of internet and mobile payment users, meaning that digital finance platforms can accumulate users and iterate products in a very short time while rapidly amortizing R&D and compliance costs. Literature points out that the rapid growth of China' s digital payment market was built upon high-frequency transaction scenarios constructed by e-commerce platforms and social networks. Through the deep integration of payment scenarios and financial services, payment platforms have

transformed from simple transaction tools into essential financial infrastructure [**?**, **?**]. This developmental path—starting from authentic transaction needs and expanding through endogenous scenarios—constitutes a defining characteristic of digital finance development in China.

2.2 从支付便利性到多元化金融服务

With payment services as the entry point, China' s digital financial services have progressed from satisfying basic transaction convenience to meeting higher-level demands for asset allocation and risk management.

The initial breakthrough of Chinese digital finance in the payment sector originated from the urgent social demand for high-efficiency, low-cost payment tools. In the early 21st century, China had not yet established a widespread or convenient credit card payment system, and cash transactions remained dominant.

The lag in the card-based payment infrastructure reduced both the costs and resistance associated with promoting mobile payments. Existing literature suggests that the rapid diffusion of QR code-based mobile payment technology in 21st-century China was primarily due to its significantly lower dependence on physical infrastructure and institutional environments compared to traditional card-based systems. This drastically lowered the adoption threshold for both merchants and consumers. This technological trajectory allowed China to achieve a "leapfrog" replacement of legacy payment systems in the retail sector. Empirical studies have found that transaction convenience, usage costs, system compatibility, and network externalities are the core factors driving the adoption of mobile payments among Chinese consumers. The extensive application of mobile payments in high-frequency daily scenarios—such as transportation, catering, and retail—has embedded payment behavior into the daily lives of residents, fostering a foundation of trust and usage inertia toward digital financial products. Consequently, payment services serve not only as a transactional tool but also as a gateway service into the digital financial ecosystem, creating the necessary conditions for the supply of diversified financial services.

The rapid development of internet-based money market funds (MMFs) essentially represents the release of residents'asset allocation demands within a digital environment. Relevant literature points out that against an institutional backdrop where traditional bank demand deposit yields remained low for extended periods and the process of interest rate liberalization lagged, many residents faced a trade-off dilemma between "low yield/high liquidity"and "high yield/low liquidity." Internet MMFs utilize technological means to aggregate small-scale funds for large-scale allocation while maintaining a close link with payment accounts for liquidity management, thereby functioning as a functional substitute for demand deposits. The transition from payment accounts to wealth management accounts is driven by clear endogenous mechanisms. On one hand, high-frequency payment behavior leads to a stable accumulation of funds on digital platforms, increasing user sensitivity toward capital efficiency. On the other

hand, platforms naturally integrate wealth management functions into payment scenarios through interface design and product embedding, significantly reducing the cognitive and operational costs for users participating in financial activities. Through this "scenario-embedded" wealth management model, digital financial services have achieved vertical expansion.

For small, medium, and micro enterprises (SMMEs), the digitalization of payment settlements has similarly stimulated the release of credit demand. For a long time, SMMEs have faced difficulties in obtaining affordable financing, struggling to secure continuous and stable credit support through the traditional financial system. This phenomenon is commonly summarized as the "Macmillan Gap," rooted in information asymmetry and prohibitively high risk-assessment costs. The application of digital technology allows financial institutions to accumulate behavioral data—such as transaction flows, payment frequencies, and customer structures—to construct data-driven credit evaluation mechanisms. This reduces reliance on physical collateral and standardized financial statements. Empirical research indicates that digital credit is better suited to the operational characteristics of SMMEs in terms of approval speed, financing flexibility, and service sustainability. Through rapid approval processes, revolving credit lines, and on-demand usage, digital finance has significantly eased corporate financing constraints and exerted a positive influence on corporate investment expansion and innovation activities. More importantly, the release of this credit demand is reflected not only in the expansion of financing scale but also in the improvement of financing quality—namely, enhanced financing efficiency, increased flexibility in fund utilization, and improved predictability of financial services for enterprises.

Furthermore, the financial needs of China' s rural areas constitute a vital component of the demand-driven digital finance model. Due to geographic dispersion, lower income levels, and a long-term deficiency in financial infrastructure, rural areas have often occupied a marginal position in the traditional financial system. This has resulted in a more intense demand for low-threshold financial services among rural residents and agricultural business entities. Relevant literature notes that digital inclusive finance, through mobile terminals and platform-based services, has effectively lowered the entry barriers for rural financial services, enabling farmers to access payment, credit, and insurance services without relying on physical bank branches. Further empirical evidence demonstrates that digital finance has a significant promotional effect on the income growth and risk resilience of China' s rural residents. By providing productive credit and agricultural insurance, digital finance smoothes fluctuations in household income and enhances the capacity of farmers to engage in non-agricultural employment and expanded reproduction.

3 技术变革、数字化转型与金融供给侧结构性改革

The widespread application of a new generation of digital technologies is profoundly transforming the information processing methods and resource alloca-

tion logic of the financial system.

This process continues to drive the digital transformation of financial institutions and reshape financial supply models, providing a new pathway for the implementation of financial supply-side structural reforms.

3.1 技术变革对金融生产要素与生产函数的重构

Digital technology has profoundly reshaped the structure of the financial production function by systematically altering the accessibility, processability, and verifiability of information elements. Financial intermediation in the context of digital finance increasingly manifests as an information-intensive production process, where new factors such as data-driven algorithms and computing power have become increasingly vital. This shift implies a significant increase in the marginal output of information processing capabilities within the financial production function, which is reflected in practice through systemic changes in the cost structures of financial intermediaries, risk pricing logic, and organizational operational modes. The digital economy literature generally posits that digital technology reshapes resource allocation mechanisms by significantly reducing the costs of information acquisition, processing, and transmission, thereby altering the manifestations of information asymmetry in the market. Goldfarb and Tucker point out that the fundamental impact of digital technology is not the "creation of new demand," but rather the transformation of market transaction boundaries and structures by reducing search, replication, transportation, tracking, and verification costs. Regarding financial activities, when the information costs required for credit assessment, risk monitoring, and contract enforcement drop significantly, transactions that were difficult to implement under traditional financial frameworks become feasible, and the production possibility frontier of the financial production function expands accordingly. First, the widespread use of big data and alternative data enables financial intermediaries to transform vast amounts of unstructured and non-financial information into production factors suitable for risk pricing. Unlike earlier literature that primarily emphasized the expansion of credit reporting systems, recent literature understands this shift from the perspective of "data as a factor of production." Farboodi et al. note that when data can be collected and processed at scale, the decision-making precision and resource allocation efficiency of firms increase non-linearly. Focusing on financial intermediaries, the larger the scale and the higher the dimensionality of the data, the greater the marginal improvement in credit assessment and risk management. Accompanying the widespread application of data factors is the deep embedding of algorithms and machine learning techniques in the financial production process. Compared to traditional risk assessment systems based on rules or linear models, machine learning can identify complex non-linear relationships in high-dimensional spaces, thereby significantly enhancing predictive accuracy. Athey and Imbens point out that machine learning does not simply improve predictive power; rather, it reshapes the feasible set of economic decisions by changing the way information is pro-

cessed. This means that credit approval, risk pricing, and asset allocation are no longer limited to a small number of interpretable variables; instead, they can utilize large-scale behavioral and transactional data to replace part of human judgment with algorithms at the production function level. Empirical evidence supports this assessment. Bartlett et al. found that algorithm-based credit decisions, while controlling for risk, significantly improved coverage for small and medium-sized enterprises and vulnerable borrowers. The secret lies in improving lending efficiency per unit of risk through more refined information processing. This indicates that algorithmic technology reshapes the relationship between inputs and outputs in the financial production function by altering the "risk-return" trade-off.

In addition to data and algorithms, distributed ledger and blockchain technologies influence the financial production function from the perspective of "trust generation." Trust in traditional financial systems relies primarily on centralized institutions, hierarchical auditing, and legal enforcement, which entail persistently high costs.

Catalini and Gans point out that the economic significance of blockchain technology lies in its ability to significantly reduce verification and coordination costs in transactions through verifiable, immutable recording mechanisms. In financial intermediation, this means that certain credit generation and contract enforcement functions can be embedded within technical infrastructure, thereby reducing reliance on manual review and organizational hierarchies.

The collective result of these technological transformations is a gradual shift in financial intermediation from a production model dominated by "capital-labor-institutions" to one dominated by "data-algorithms-technical infrastructure." Under these new circumstances, financial supply capacity depends more on data accumulation, modeling capabilities, and system scalability. This not only enhances the economies of scale and scope in financial services but also endows the financial system with greater adaptability and plasticity when facing changes in demand structures. Therefore, understanding digital finance from the supply-side perspective requires a focus on how these technologies comprehensively enhance the resource allocation capabilities of financial intermediaries by altering the input structures and constraints of the financial production function.

3.2 金融机构数字化转型成为数字金融发展的重要路径

Against the backdrop of the rapid rise of FinTech companies, traditional financial institutions are facing unprecedented pressure for digital transformation. A substantial body of literature indicates that FinTech firms, through platform-based, scenario-oriented, and data-driven service models, have created a significant competitive impact on traditional banks. This has generated a "catfish effect," where external technology-driven entrants force incumbent financial institutions to improve efficiency, restructure business models, and ac-

celerate organizational change [**?**]. In this context, the digital transformation of financial institutions is not an isolated technological upgrade, but rather a concentrated micro-level manifestation of financial supply-side structural reform. Its implementation path and effectiveness are directly related to the degree of improvement in the resource allocation efficiency of the financial system. From the perspective of transformational drivers, the digital transformation of financial institutions stems from changes in competitive structures, while also being driven by both national strategic guidance and the upgrading of customer demands. In recent years, the digital transformation of Chinese financial institutions has been driven not only by market competitive pressures but also by the strategies of "Digital China" construction and financial supply-side structural reform. Digitalization has become an essential path to enhancing the adaptability, competitiveness, and inclusiveness of the financial system. As core financial functions such as payments, credit, and wealth management are embedded into consumption and production scenarios at lower costs and higher frequencies by internet platforms and FinTech companies, the relative advantages of traditional financial institutions in customer reach, information acquisition, and service efficiency have been significantly weakened. Simultaneously, as the financial behavior of Chinese residents becomes increasingly online and scenario-based, financial institutions must use digital means to reshape customer service and enhance customer stickiness and experience. Facing this new landscape, financial institutions have gradually shifted from passive defense to proactive strategic positioning. By establishing FinTech subsidiaries, advancing strategic cooperation with technology firms, building open banking systems, and strengthening internal data governance capabilities, they are transforming from traditional capital intermediaries into data and comprehensive financial service intermediaries. Relevant literature emphasizes that this transformation is not limited to the expansion of online channels or the iteration of mobile banking functions; it also involves business process reengineering, organizational restructuring, talent realignment, and the systematic reconstruction of risk management systems. Furthermore, digital transformation requires financial institutions to introduce more flexible organizational models, such as agile development teams, cross-departmental collaboration mechanisms, and data- and product-oriented decision-making structures. This helps shorten product iteration cycles and improve responsiveness to changes in customer needs, thereby enhancing adaptability to a fiercely competitive environment. At the same time, this places higher demands on the internal governance of financial institutions; achieving a balance between flexibility and stability has become a key issue for the sustainable advancement of digital transformation.

Currently, the digital transformation of Chinese financial institutions is continuously deepening. Most institutions have completed basic electronization and mobile layouts, while some leading institutions are promoting the construction of data middle platforms and business middle platforms, attempting to expand service boundaries through Application Programming Interface (API) openness and ecosystem cooperation. Technologies such as Artificial Intelligence and

Blockchain are gradually being embedded into links such as risk control and supply chain finance, and Regulatory Technology (RegTech) is beginning to be applied in compliance and risk monitoring. Overall, Chinese financial institutions are still in an exploratory phase of technology application and business integration. Achieving full-chain digital transformation still faces multiple challenges, including the need to further accelerate organizational and cultural transformation, the continued requirement to improve data governance and integration capabilities, and the significant difficulty in achieving a balance between innovation incentives and risk management.

Regarding the impact of digital transformation on the performance of financial institutions, existing literature generally suggests that it exhibits phased and non-linear characteristics. On one hand, empirical studies have found that digital transformation significantly improves the profitability and production efficiency of banks in the medium to long term by enhancing information processing efficiency, optimizing customer screening mechanisms, and reducing unit service costs. Beccalli, as well as Koetter and Noth, point out that the continuous accumulation of information technology capital helps improve bank cost efficiency and the stability of income structures. On the other hand, some literature emphasizes that digital transformation is often accompanied by high information technology investment, data governance costs, and professional talent recruitment expenses in the initial stage, thereby squeezing the short-term profitability of banks. Research by DeYoung et al. shows that in the early stages of transformation, IT investment may reduce book profit indicators; as technology and organization gradually align, long-term benefits will progressively increase. Therefore, the relationship between the digital transformation of financial institutions and performance may present a "U-shaped" curve, with the pace of transformation, business structure, and the institution' s own absorptive capacity all influencing the curve' s trajectory.

At the risk level, digital transformation also has dual effects. One strand of literature argues that digital technology enhances risk identification precision and real-time monitoring capabilities, helping to mitigate information asymmetry and improve credit asset quality. Balyuk et al. found that algorithm-driven credit decision-making has significant advantages in controlling default risk; after introducing data-driven risk control systems, the overall non-performing loan ratios of banks declined. Another strand of literature suggests that digital transformation may also trigger new risks such as model risk, systemic operational risk, and cybersecurity risk. Aldasoro et al. emphasize that excessive reliance on complex algorithms and external technology platforms may amplify synchronous risks within the financial system under extreme circumstances. Furthermore, the intensifying FinTech competitive environment may indirectly affect the risk-taking behavior of banks by compressing traditional interest margins and changing business structures. This implies that the mechanism by which digital transformation affects risk is complex, and its final effect depends on the degree of coordination between technology application methods and the regulatory framework.

The impact of digital transformation on bank performance and risk exhibits significant heterogeneity across banks of different sizes and types. Empirical literature has found that large banks possess stronger capital strength, data accumulation, and internal R&D capabilities, enabling them to embed digital technologies into core business processes more effectively and achieve economies of scale and scope during transformation. In contrast, small and medium-sized banks face stricter resource constraints in terms of technology investment and system integration, leading to greater uncertainty in performance improvement and risk control outcomes.

3.3 金融供给侧结构性改革的深化

By reshaping financial supply methods and risk identification mechanisms, digital finance provides a practical and feasible technological foundation for resolving long-standing structural imbalances. In recent years, it has become a vital driving force for China' s implementation of financial supply-side structural reforms.

First, at the level of financing structure, the development of digital finance enables financial resources to be more precisely "drip-irrigated" into the real economy. A substantial body of literature indicates that China' s private enterprises, small and micro-sized enterprises (SMEs), and start-up technology firms have historically faced widespread difficulties in accessing financing and high financing costs. Through online credit, platform-based supply chain finance, and data-driven credit assessment mechanisms, digital finance reduces the reliance on collateral and firm size. This allows financial institutions to identify the true operational status of SMEs at a lower marginal cost, thereby expanding financial supply in a targeted manner. Second, digital finance improves the efficiency of capital factor allocation by enhancing information transparency and pricing efficiency. Under traditional technological conditions, high information asymmetry and transaction costs often led to capital being concentrated in low-risk but low-return sectors, suppressing the development potential of innovative enterprises and high-productivity sectors. The development of digital finance guides capital factors toward firms and industries with higher total factor productivity by reducing information search costs, strengthening risk identification capabilities, and expanding the coverage of financial markets, thus enhancing overall resource allocation efficiency. At the regional level, digital finance also significantly strengthens regional innovation capabilities and promotes the transition of economic growth models from factor-driven to innovation-driven by facilitating technology market transactions and the flow of innovation factors.

Third, data-driven financial supply-side structural reform helps enhance the inclusiveness of financial services. Empirical literature finds that digital inclusive finance significantly lowers the entry barriers to financial services by overcoming the limitations of physical branches and manual services. This enables rural residents, low-income groups, and small and micro-business entities to more conveniently access basic financial services such as accounts, payments,

credit, and insurance. From a supply-side perspective, digital finance not only increases the breadth of financial service coverage but also improves household risk management capabilities and asset allocation structures through the downward extension of products and services, thereby promoting income growth and risk mitigation. At the urban-rural and regional levels, this inclusive effect helps narrow the gap in financial resource allocation, providing solid financial support for achieving the goal of common prosperity.

From this perspective, China's financial supply-side structural reform takes data as the core element, digital technology as the key support, and the digital transformation of financial institutions as the primary path to achieve improvements in the quality and efficiency of financial services by continuously optimizing the financial structure. In this process, digital finance acts as both a "regulator" for correcting resource misallocation and an "amplifier" for enhancing financial efficiency and inclusivity.

4 包容性监管与数字金融高速成长

The rapid growth of digital finance in China is highly correlated with the government' s financial regulatory system and its broader financial development strategies. During the early stages of digital finance development, regulatory authorities established a policy arrangement characterized by both flexibility and gradualism, providing the necessary institutional space for the emergence and diffusion of new financial formats.

The academic community has characterized this institutional feature as "inclusive regulation." Throughout the evolution of digital finance, regulation was not absent; rather, it intervened dynamically through an approach of "development first, standardization later" and "governing while innovating." This strategy allowed digital finance to fully unleash its innovative vitality in its early stages, while ensuring it could be progressively integrated into a more systematic and rule-based regulatory framework following its large-scale expansion.

4.1 中国数字金融从野蛮生长到规范发展的转变

Digital finance in China has evolved through a process of practice-led development followed by the gradual refinement of regulatory frameworks. Existing literature suggests that the core logic of Chinese digital finance regulation is neither simple laissez-faire nor rigid control. Instead, it follows an inclusive regulatory path predicated on risk controllability and oriented toward pragmatic efficiency. This approach differs both from the highly cautious regulatory models adopted by some advanced economies and from a complete absence of oversight. Rather, it involves the continuous adjustment of regulatory intensity and methods within a framework of dynamic equilibrium.

Existing literature suggests that Chinese regulators initially adopted a friendly stance toward the rapidly developing fintech industry, refraining from imposing

strict restrictions on the entry of emerging fintech enterprises into the financial sector. However, it is important to note that regulatory tolerance was not synonymous with a regulatory vacuum. During the early stages of reform and opening-up, a large number of small and micro-enterprises, individual businesses, and new service industry entities struggled to obtain financial support. Against this backdrop, third-party payments, internet wealth management, and platform-based financial services objectively fulfilled the critical functions of alleviating financial exclusion and reducing transaction costs.

To enhance the inclusiveness of financial services, regulatory authorities adopted a strategy of "establishing basic legitimacy first, then gradually refining rules" in fields such as third-party payments. In practice, this approach effectively reduced institutional uncertainty, enabling payment institutions to continuously expand application scenarios across e-commerce, lifestyle services, and social platforms, thereby rapidly forming bilateral network effects. As user scale and transaction frequency increased, payment behaviors gradually evolved into financial behaviors, creating the necessary conditions for the subsequent development of wealth management, credit, and insurance businesses. This strategy lowered the institutional friction costs of innovation diffusion, allowing market competition mechanisms to perform preliminary screening under minimal regulatory intervention.

As the scale of digital financial business expanded rapidly, endogenous risks began to accumulate, shifting from the individual level to the systemic level. Some institutions even achieved rapid expansion through high-yield promises, maturity mismatches, and information opacity, which induced moral hazard and planted the seeds of hidden risks. The underlying cause was that the speed of innovation significantly outpaced the speed of rule generation, leaving the risk-taking behavior of market participants without effective constraints. In response to these emerging risks, the regulatory logic underwent a fundamental shift. The special rectification campaign for internet financial risks launched in 2016 established insurmountable risk boundaries for the industry through centralized governance. This round of rectification was problem-oriented, employing "look-through" supervision to identify the essence of business activities and achieving risk clearing through classified disposal. By eliminating non-compliant entities and strengthening requirements for licensed operations and information disclosure, the special rectification pushed digital finance to transition from being "business model innovation-oriented" to "capability and compliance-oriented." This shift made technology, risk control, and governance capabilities the core elements of competition, laying the institutional foundation for the subsequent integration of digital finance with the traditional financial system.

Following the completion of risk clearing and the establishment of basic norms, the objective of digital finance regulation shifted toward "stabilizing innovation, improving quality, and promoting governance," explicitly incorporating digital finance development into the overall framework of financial supply-side structural reform. The *FinTech Development Plan (2019–2021)*, released in 2019, system-

atically linked fintech with serving the real economy, preventing and controlling financial risks, and deepening financial reform for the first time, emphasizing the use of technological means to improve the quality of financial supply. The launch of regulatory sandbox pilots exemplifies this upgraded logic. These pilots emphasize testing innovations within real market environments while simultaneously ensuring risk controllability through information disclosure, process monitoring, and accountability mechanisms.

regulatory constraints, ensuring that potential risks are kept within manageable limits. From a macro perspective, regulation is no longer merely about relaxing constraints; rather, it has become a proactive form of institutional provision. Through strategic planning, pilot programs, and the establishment of standards, regulation guides market expectations and technological trajectories, thereby facilitating the progressive integration of digital finance into the broader financial governance system.

Moving from a period of rapid, unregulated expansion toward standardized development, China' s digital finance regulation has been a dynamic process of adaptation, continuously adjusting to shifts in market structures and risk profiles. Regulatory forbearance initially created an environment conducive to the diffusion of innovation, while subsequent targeted rectification campaigns established a baseline for risk governance. More recently, the introduction of institutionalized tools has provided a roadmap for high-quality development. Consequently, the evolution of digital finance in China has achieved a comprehensive balance between fostering innovative growth and maintaining financial stability.

4.2 数字金融推动中国金融体系迈向高质量发展新阶段

Unlike the "incremental development" emphasized by traditional financial development theories, China did not follow a linear path of financial infrastructure construction—moving from checks to bank cards, then credit cards, and finally electronic payments. Instead, by leveraging digital technology, China bypassed several intermediate stages to enter a new phase centered on mobile payments and data-driven financial services, achieving leapfrog development in the financial sector.

First, at the level of the payment system, China achieved a rapid transition from a "cash society" to a "quasi-cashless society." Unlike Europe and the United States, which have long relied on credit card networks, China had limited credit card penetration and an incomplete acceptance network for a long period. Paradoxically, this shortcoming reduced path dependency and created space for the diffusion of new payment technologies. Literature suggests that QR code payments, characterized by extremely low hardware investment and access costs, quickly covered a wide range of scenarios—from large shopping malls and supermarkets to micro-merchants—decoupling payment tools from the banking account system and embedding them directly into daily consumption and life

services. This not only significantly reduced transaction costs but also accumulated massive amounts of behavioral data through high-frequency, small-value, and scenario-based transactions, providing a data foundation for the digitalization of financial services. From an international comparative perspective, the maturity of credit card systems in developed economies left consumers and merchants with little incentive to switch to mobile payments. In China, however, QR code payments quickly replaced both cash and bank cards due to their advantages of being "cheaper, more convenient, and faster to diffuse." This phenomenon indicates that the "late-mover advantage" of financial infrastructure can, under specific conditions, facilitate leapfrog development in payment systems.

Second, at the level of credit assessment and financial intermediation mechanisms, digital technology has driven a shift in the operational logic of Chinese finance from "collateral-guarantee-credit records" to "data-behavior-algorithms." Traditional financial systems rely heavily on standardized financial statements, collateral, and credit history. In contrast, digital finance platforms pioneered the use of e-commerce transaction records, payment flows, logistics information, and platform behavioral data for credit assessment, thereby providing priceable financial services to a large number of "credit invisible" individuals [**?**]. Empirical studies show that credit models based on alternative data have advantages in predicting default risks, with their marginal value being particularly prominent among groups lacking traditional credit information. This data-centric credit creation mechanism has allowed China to achieve large-scale digital credit expansion despite lacking a mature personal credit reporting system, forming a comparative advantage in inclusive finance. This essentially represents a reconstruction of the logic of credit generation by utilizing digital technology and mining data elements, bypassing intermediation models that are highly dependent on physical assets and historical records.

Third, in terms of comparative advantage, the strengths of China' s digital finance are primarily reflected in the application and institutional layers rather than the underlying general-purpose technology layer. Numerous studies point out that Europe and the United States still maintain a leading position in foundational fields such as chips, basic software, and core algorithms. However, China has demonstrated significant advantages in the diversity of application scenarios, the speed of product iteration, and the construction of platform-based financial ecosystems. This advantage stems from the network effects brought by an ultra-large-scale market, the institutional space provided by regulatory tolerance, and the deep embedding of digital platforms in high-frequency scenarios such as payments, social networking, and e-commerce.

Finally, regarding regulatory philosophy, different economies exhibit distinct priorities in the governance of digital finance. The European Union emphasizes data protection, privacy rights, and ethical constraints; the United States focuses more on anti-money laundering, investor protection, and the application of securities laws; while China' s regulatory practice highlights the functional

positioning of digital finance in serving the real economy and enhancing the inclusivity of the financial system. This difference is not a simple comparison of regulatory "tightness" or "looseness."

Rather, it is a rational choice based on different development stages and financial structural conditions, and it constitutes an important institutional background for the high-speed development of China' s digital finance at the application layer.

5. The Bright Prospects of China' s Digital Finance Development during the "15th Five-Year Plan" Period

During the "15th Five-Year Plan" period, promoting high-quality development has become the central theme of economic and social progress. China' s digital finance is transitioning from a high-growth stage—driven by factors such as massive market demand, scenario innovation, and institutional tolerance—to a high-quality development stage. In accordance with the general requirement proposed by General Secretary Xi Jinping that "digital finance must seize opportunities and focus on security," and guided by the spirit of the Fourth Plenary Session of the 20th CPC Central Committee, the development of digital finance in China will place greater emphasis on serving the real economy, utilizing data elements and digital technologies, and balancing development with security. The sector will move from "building the framework" to "accumulating momentum," activating the financial "bloodline" with data elements and supporting the construction of a financial powerhouse with digital technology, thereby vigorously promoting sustained healthy economic development and comprehensive social progress.

First, at the "treetop" level (market supply and demand), China' s digital finance will accelerate its transition from relying on the "consumer internet" to the "industrial internet," achieving deep integration with the real economy. As sectors such as consumer finance, mobile payments, and online wealth management mature, a model solely dependent on the expansion of consumption scenarios is becoming unsustainable. The area with greater potential for digital finance lies in deep integration with industrial, supply, and innovation chains, becoming a vital infrastructure supporting the operation of the industrial system. By combining with technologies such as the Industrial Internet of Things (IIoT), the Internet of Things (IoT), and blockchain, financial services are expected to extend deep into industrial chains, embedding capital allocation, risk management, and information services into the entire process of production and operation. Consequently, finance will not merely be a pipe for delivering capital; through the synergy of data, technology, and rules, it can provide more diverse and inclusive financial products and services, effectively improving corporate operational efficiency, optimizing industrial organization, and enhancing the quality and efficiency of financial services for the real economy.

Second, at the "trunk" level (technological transformation), data and technology

are the two key elements. First, the process of valuing data elements will reshape the business logic and valuation basis of digital finance. As China' s systems for data rights, circulation, and security governance gradually improve, data is transforming from an implicit factor of production into a key asset that can be measured, traded, and allocated. For the financial system, this means that data is no longer just a supplementary tool for risk management or marketing, but may become an independent carrier of value and a foundation for financial innovation.

In the future, financial instruments and service forms developed around data assets will become more diverse. A company' s data capabilities, algorithmic prowess, and data governance levels will also become critical factors affecting its competitiveness. Second, the development of technologies such as quantum computing and artificial intelligence will drive Chinese financial services toward intelligence and personalization, making risk identification, customer service, and asset allocation more refined and efficient.

It must be noted that improvements in technological capabilities do not automatically translate into enhanced social welfare. Exploring appropriate institutional rules to balance goals such as efficiency, compliance, and ethics will be a major challenge for the sustained and healthy development of digital finance.

Third, at the "root" level (government policy and regulatory systems), the orientation of financial regulation is shifting from "passive response to risk" to "proactive shaping of order." As digital finance activities become increasingly complex and cross-sectoral, traditional regulatory methods—which are institution-centered and focused on ex-post correction—struggle to meet practical needs. Under the keynote of strengthened regulation, China will effectively improve the foresight, precision, synergy, and effectiveness of digital finance supervision by developing regulatory technology (RegTech), promoting data sharing, and improving "look-through" supervision to build a financial safety net. It is foreseeable that a complete and effective financial regulatory system will serve as an important institutional guarantee for stabilizing market expectations, guiding digital technology paths, and maintaining fair competition. As the cross-border attributes of digital finance grow, China will deeply participate in the reconstruction of global rules in areas such as data flows, digital currencies, anti-money laundering, and platform governance. How to enhance China' s voice in international rule-making while maintaining financial security will be a key issue in the "going global" process of digital finance.

In summary, driven by the convergence of rationalized market demand, accelerated digital technology innovation, and a continuously improving regulatory system, China's digital finance is expected to transform from a tool for efficiency enhancement into developmental infrastructure. It will play a more enduring and stable strategic supporting role in serving the real economy, promoting industrial upgrading, and fostering social equity. Based on these judgments, in a development environment where strategic opportunities and risks coexist, as long as we follow the guidance of the spirit of the Fourth Plenary Session of the

20th CPC Central Committee, adhere to high-quality development, and persist in comprehensively deepening reform, China' s digital finance can achieve synergy between the government and the market, mutual promotion of development and security, and an organic balance between innovation and regulation. This will lead to a new stage of higher quality, greater efficiency, more sustainability, increased fairness, and enhanced security during the "15th Five-Year Plan" period.

"Recommendations of the CPC Central Committee on Formulating the 15th Five-Year Plan for National Economic and Social Development," *People' s Daily*, November 29, 2025, p. 2. Institute of Party History and Literature of the CPC Central Committee, eds., *Excerpts from Xi Jinping' s Discourses on Financial Work*, Central Party Literature Press, 2024 edition, p. 60.

References

[1] Ehrentraud J, Ocampo D G, Garzoni L, et al. Policy responses to fintech: a cross-country overview [R]. Bank for International Settlements, Financial Stability Institute, 2020. [2] Allen F, Qian J, Qian M, A review of China' s institutions [J]. Annual Review of Financial Economics, 2019, 11(1): 39-64. [3] Buchak G, Matvos G, Piskorski T, et al. Fintech, regulatory arbitrage, and the rise of shadow banks [J]. Journal of Financial Economics, 2018, 130(3): 453-483. [4] Berg T, Burg V, Gombovi A, et al. On the rise of fintechs: credit scoring using digital footprints [J]. Review of Financial Studies, 2020, 33(7): 2845-2897. [5] Philippon T. The fintech opportunity [J]. NBER Working Paper, 2016, No. 22476. [6] Gomber P, Kauffman R J, Parker C, et al. On the fintech revolution: interpreting the forces of innovation, disruption, and transformation in financial services [J]. Journal of Management Information Systems, 2018, 35(1): 220-265. [7] Beck T, Demirg-Kunt A, Martinez Peria M S. Reaching out: access to and use of banking services across countries [J]. Journal of Financial Economics, 2007, 85(1): 234-266. [8] Guo Feng, Wang Jingyi, Wang Fang, et al. Measuring the Development of Digital Inclusive Finance in China: Index Compilation and Spatial Characteristics [J]. China Economic Quarterly, 2020, 19(4): 1401-1418. [9] Stiglitz J E, Weiss A. Credit rationing in markets with imperfect information [J]. American Economic Review, 1981, 71(3): 393-410. [10] Demirg-Kunt A, Klapper L, Singer D, et al. The global findex database 2017: measuring financial inclusion and the fintech revolution [M]. Washington DC: World Bank, 2018. [11] Frost J, Gambacorta L, Huang Y, et al. BigTech and the changing structure of financial intermediation [J].

Economic Policy, 2019, 34(100): 761-799. [12] Rochet J C, Tirole J. Platform competition in two-sided markets [J] . Journal of the European Economic Association, 2003, 1(4): 990-1029. [13] Au Y A, Kauffman R J. The economics of mobile payments: understanding stakeholder issues for an emerging financial technology application [J] . Electronic Commerce Research and Applications, 2008, 7(2): 141-164. [14] Dahlberg T, Guo J, Ondrus J. A critical review of mobile payment research [J] . Electronic Commerce Research and Applications,

2015, 14(5): 265-284.

[15] Gennaioli N, Shleifer A. A crisis of beliefs: investor psychology and financial fragility [M] . Princeton:

Princeton University Press, 2018. [16] Yang Weiming, Su Lin, Wang Mingwei. Digital Inclusive Finance and the Income of Urban and Rural Residents: An Analysis of the Mediating Effects Based on Economic Growth and Entrepreneurial Behavior [J]. Journal of Shanghai University of Finance and Economics, 2020, 22(4): 83-94. [17] Goldfarb A, Tucker C. Digital economics [J]. Journal of Economic Literature, 2019, 57(1): 3-43. [18] Farboodi M, Mihet R, Philippon T, et al. Big data and firm dynamics [J]. American Economic Review Papers and Proceedings, 2019, 109: 38-42. [19] Athey S, Imbens G. Machine learning methods that economists should know about [J]. Annual Review of Economics, 2019, 11: 685-725. [20] Bartlett R, Morse A, Stanton R, et al. Consumer-lending discrimination in the FinTech era [J]. Journal of Financial Economics, 2022, 143(1): 30-56. [21] Catalini C, Gans J S. Some simple economics of the blockchain [J]. Communications of the ACM, 2020, 63(7). [22] Bunea S, Kogan B, Stolin D. Banks versus fintech: at last, it' s official [J]. Journal of Financial Transformation, 2016, 44: 122-131. [23] Thakor A V. Fintech and banking: what do we know? [J]. Journal of Financial Intermediation, 2020, 41. [24] Boot A W A, Hoffmann P, Laeven L, et al. Financial intermediation and technology: what' s old, what' s new? [R]. IMF Working Papers, 2020, No. 161. [25] Vives X. Digital disruption in banking [J]. Annual Review of Financial Economics, 2019, 11: 243-272. [26] Beccalli E. Does IT investment improve bank performance? Evidence from Europe [J]. Journal of Banking & Finance, 2007, 31(7): 2205-2230. [27] Koetter M, Noth F. IT use, productivity, and market power in banking [J]. Journal of Financial Stability, 2013, 9(4): 695-704. [28] DeYoung R, Lang W W, Nolle D E. How the internet affects output and performance at community banks [J]. Journal of Banking & Finance, 2007, 31(4): 1033-1060.

Journal of Banking & Finance, 2007, 31(4): 1033-1060. [29] Balyuk T, Berger A N, Hackney J. What is fueling finTech lending? The role of banking market structure [J] .

The Review of Corporate Finance Studies, 2025: cfae028. [30] Aldasoro I, Gambacorta L, Giudici P, et al. The drivers of cyber risk [J]. Journal of Financial Stability, 2022, 60: 100989. [31] Erel I, Liebersohn J. Can fintech reduce disparities in access to finance? Evidence from the Paycheck Protection Program [J]. Journal of Financial Economics, 2022, 146(1): 90-118. [32] Zhou Guangyou, Luo Sumei, Lian Shuting. Fintech Innovation, P2P Lending Rate Determination, and Financing for Small and Micro Enterprises: On the Governance of the "Macmillan Gap" [J]. Studies of International Finance, 2020(3): 76-86. [33] Zhong Kai, Liang Peng, Dong Xiaodan, et al. Digital Inclusive Finance and the Secondary Allocation of Trade Credit [J]. China Industrial Economics, 2022(1). [34] Zhang Xun, Wan Guanghua, Wu Haitao. Bridging the Digital Divide: The Development of Digital Finance with Chinese Characteristics [J]. Social Sciences

in China, 2021(8): 35-51, 204-205. [35] Zhang Yilin, Yu Yunjun, Chen Zhuming. Artificial Intelligence, SME Financing, and the Digital Transformation of Banks [J]. China Industrial Economics, 2021(12): 69-87. [36] Zhang Xun, Wan Guanghua, Zhang Jiajia, et al. Digital Economy, Inclusive Finance, and Inclusive Growth [J]. Economic Research Journal, 2019, 54(8).

[37] Zhang Haiyang, Han Xiao. Research on the Poverty Reduction Effect of Digital Finance: From the Perspective of Poverty Vulnerability [J]. Chinese Review of Financial Studies, 2021, 13(6): 57-77, 119. [38] Dong Yun, Li Xin. The Developmental Trajectory and Frontier Dynamics of Fintech Thought in China: A Literature Review [J]. Financial Economics Review, 2019, 34(5): 38-52. [39] Auer R, Böhme R. The technology of retail central bank digital currency [J]. BIS Quarterly Review, 2020(3). [40] Allen F, Gu X, Jagtiani J. Fintech, cryptocurrencies, and CBDC: financial structural transformation in China [J]. Journal of International Money and Finance, 2022, 124: 102625.

The Logic and Prospects of China s Digital Finance Development Dong Yun Wang Yong (Institute of Finance & Banking, Chinese Academy of Social Sciences, Beijing 100710, China)

Abstract

Purpose/Significance Against the backdrop of scaled expansion of data factors, rapid advancement of digital technologies, and profound structural transformation of the financial system, digital finance in China has demonstrated a leapfrog growth trajectory. However, its underlying driving mechanisms have not been systematically clarified. Grounded in the specific context of China and drawing upon frontier literature, this paper elucidates the fundamental drivers behind the rapid development of China' s digital finance, thereby offering a theoretical framework for understanding its evolutionary trajectory.

Method/Process Employing the "FinTech Tree" as an analytical framework and integrating literature review with theoretical analysis, this study systematically examines the key drivers of China' s digital finance development from three dimensions: market environment, technological conditions, and institutional arrangements.

Result/Conclusion findings indicate that a supersized market coupled with constraints inherent in the traditional financial system has jointly shaped a massive demand for financial services. New-generation digital technologies, by reshaping information processing methods and resource allocation mechanisms, have driven the digital transformation of financial institutions and enhanced financial inclusion. Furthermore, government policies have achieved a dynamic equilibrium between fostering innovation and mitigating risks, serving as a crucial institutional safeguard for the leapfrog development of digital finance. Looking ahead, China' s digital finance is poised to enter a phase of higher-quality and more sustainable development during the 15th Five-Year Plan period.

Keywords

Abstract

Digital finance, driven by digital technologies, has become a pivotal force in the modern economic landscape. This paper explores the intersection of digital transformation within the financial sector and the unique characteristics of an ultra-large market. We analyze how financial digital transformation leverages technological advancements to enhance efficiency and accessibility while addressing the complexities inherent in large-scale market operations. Furthermore, the study examines the evolving role of financial regulation in maintaining systemic stability and protecting consumers amidst rapid technological shifts. By synthesizing these elements, we provide insights into the strategic imperatives for navigating the digital finance era.

Keywords: Digital finance; Digital technologies; Ultra-large market; Financial digital transformation; Financial regulation

Note: Figure translations are in progress. See original paper for figures.