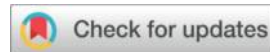


Fintech Innovation and Financial Power Construction in China: Influencing Mechanisms, Existing Problems and Solutions



Author: Ziyu Li^{1*}

Affiliation:

^{1*}Student, School of Finance, Yunnan University of Finance and Economics, Kunming, China, 650221

All authors' email:

First author's email: LiZiyu200311@163.com/754291154@qq.com

Corresponding author's email: LiZiyu200311@163.com/754291154@qq.com

All authors' ORCID account link:

First author's ORCID: <https://orcid.org/0009-0005-0337-0466>

Corresponding author's ORCID: <https://orcid.org/0009-0005-0337-0466>

All authors' title:

First author's title: Student

Corresponding author's title: Student

Funding:

As a key member, I participated in the National Social Science Fund Project for the Study of Rare and Esoteric Scholarship - "Collection, Collation and Database Construction of Yi Medicine Knowledge in Yi Manuscripts", and was responsible for assisting in the translation for database construction.

All authors' bio:



(1) The paper "Fintech Innovation and the Construction of China's Financial Power: Research based on Practice" was published in Economic Circle. I am the first author. It was included in the 4th issue of 2024, a general journal.

(2) The paper "Applications of Deep Learning in Financial Time Series Forecasting" was published in DEIS. I am the first author.

Abstract: This study focuses on the interrelationship between financial technology innovation and the construction of China as a financial power. Through empirical analysis, it reveals the mechanism of action, development trends, and practical challenges between them, and explores the implementation path of innovation-driven construction of a financial power. This research clarifies the functional positioning of financial technology innovation in the strategy of building a financial power, providing decision-making references for advancing the modernization of China's financial system. The results show that financial technology innovation has accelerated the process of building China into a financial power through multiple paths, such as enhancing the capability of financial technology innovation, optimizing the operational efficiency of financial markets, strengthening the international competitive advantages of the financial industry, expanding participation in global financial governance, and improving the systemic risk prevention and control system.

Key words: Fintech innovation; financial power; practical path

1 Introduction

In the context of deep integration of the global value chain, financial technology innovation is reconstructing the economic competition pattern among various countries. [1, 2]. As a representative of emerging economies, China has placed financial technology at the core of its national financial strategy, and its innovative practices are directly related to the implementation effect of the strategy to build a financial power [3]. Based on empirical analysis methods, this study deconstructs the internal correlation mechanism between financial technology innovation and the construction of China's financial power, focusing on the realization path of digital technology empowering the modernization of the financial system. It aims to construct a financial technology governance framework with Chinese characteristics and provide an Oriental paradigm.

1.2 Methods and Data Sources

The research methods adopted in this paper mainly include literature review, case analysis, and empirical research. The data sources for this paper mainly include policy documents on financial technology innovation released by the Chinese government, academic papers related to financial technology innovation, cases of financial technology innovation, and practical research results. Additionally, we will obtain firsthand practical experience and perspectives through activities such as interviewing experts and participating in seminars.

1.3 Objectives and Contents

The study deconstructs the interactive mechanism between financial technology innovation and the implementation of the strategy to build a financial power, clarifies the functional positioning and value contribution of financial technology in the process of financial system modernization, and proposes a precise policy framework to support the high-quality development of China's finance. The research covers four core dimensions: explaining the evolution law of financial technology empowering a financial power; revealing the multi-

dimensional transmission mechanism of technological innovation on improving financial competitiveness; diagnosing the structural shortcomings and institutional bottlenecks in the current development of financial technology; and designing a strategic roadmap for the coordinated advancement of technology, institutions, and markets.

1.4 Significance of the Research

Firstly, it helps enhance our country's ability and level of financial technology innovation, promoting the development of our financial market. Secondly, it improves the international competitiveness of our financial industry, strengthening our influence and voice in the global financial system. Thirdly, it aids in preventing financial risks, ensuring the stable operation of the financial market. Lastly, it advances the process of building our country into a financial powerhouse, providing beneficial theoretical and practical guidance for the development of our financial industry.

2 Overview of Fintech Innovation

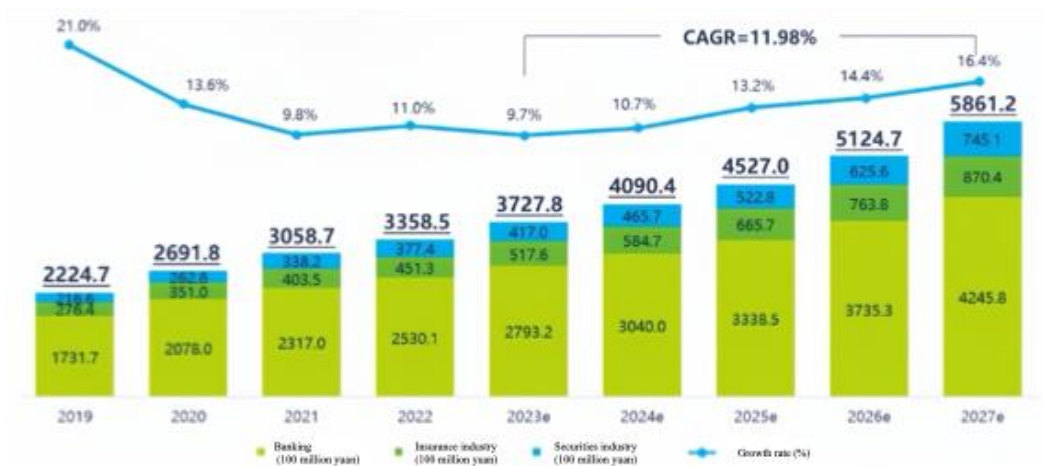
2.1 Definition and Characteristics of Fintech Innovation

Financial technology innovation refers to the leapfrog upgrading of financial service forms by introducing cutting-edge technological paradigms, reconstructing financial business logic, and optimizing service mechanisms. Its essence is to reshape the financial value chain with digital genes, and its core value lies in building a more efficient, inclusive, and resilient financial ecology. Its main characteristics are as follows: 1. Paradigm breakthrough. 2. System reconstruction. 3. Implementation effectiveness. 4. Ecological sustainability[4].

2.2 Analysis of the Current Situation of Fintech Innovation

2.2.1 General Overview of Fintech Innovation in China

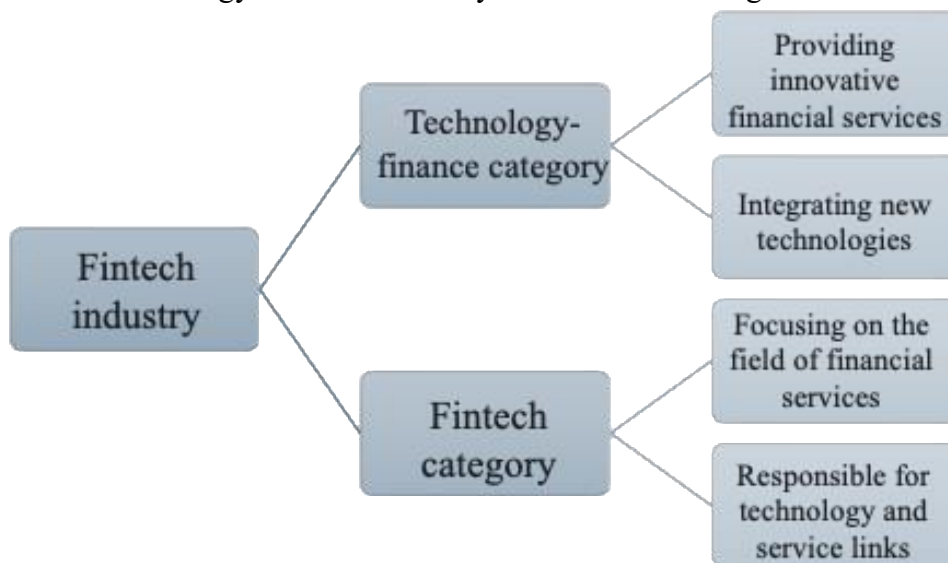
The study focuses on the dynamic trajectory and structural characteristics of China's financial technology development. Despite its relatively short development cycle, China's financial technology has shown a multi-dimensional leap forward: in terms of service entities, a diversified ecology of "banks - technology companies - scenario platforms" has been formed; [5]. in terms of application breadth, it has achieved in-depth penetration from payment and clearing to fields such as inclusive finance and green finance; in terms of technical methods, it has integrated cutting-edge tools [6]. and in terms of regulatory environment, an inclusive and prudent governance framework has been built.[7]. this wave of innovation has not only reshaped the financial service paradigm, but also significantly improved the financing efficiency of the real economy through tools such as supply chain finance and intelligent risk control, laying a technical foundation for the construction of a financial power. However, there are still obvious shortcomings when compared with the international advanced level: there are problems such as "fragmented investment and lack of performance evaluation" in financial and technological input, and the cross-departmental coordination mechanism has not yet been improved; innovative resources are excessively concentrated in the financial application layer, and breakthroughs in basic technology fields are relatively limited; institutional innovation lags behind technological iteration, typically, key systems such as the definition of data element property rights and the algorithmic regulatory framework are still in the exploration stage.



Science and technology investment of Chinese financial institutions from 2019 to 2027

2.2.2 Main Fields and Achievements of Fintech Innovation in China

Financial technology, the integration of finance and technological innovation, has profoundly transformed the ecosystem and structure of the financial industry[1]. In practical exploration, China's financial technology innovation mainly covers the following areas:

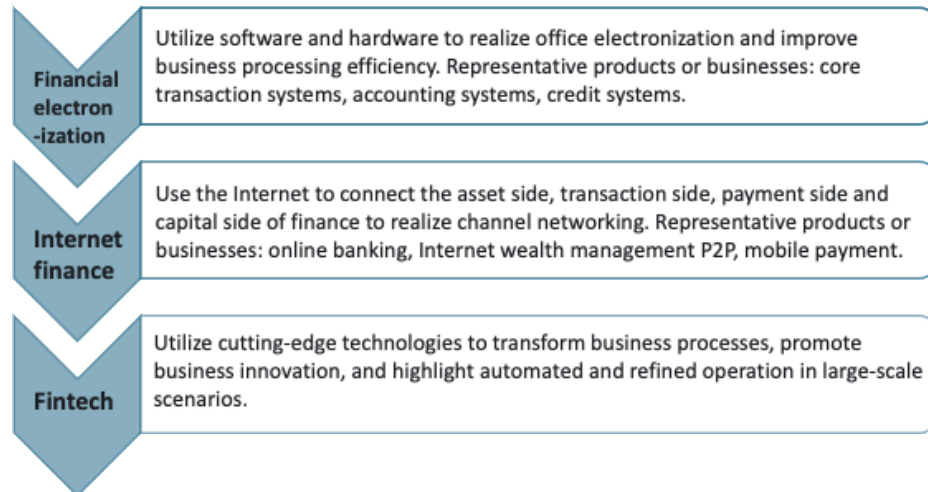


Analysis of Main Types of Fintech Industry

- (1) Financial technology enterprises: They are the main body of financial technology innovation, including various financial technology companies, internet finance companies, third-party payment companies, etc[8]. These enterprises utilize big data, cloud computing, artificial intelligence, and other technologies to provide convenient and efficient services for the financial industry, promoting the popularization and upgrading of financial services. Examples include Ant Financial, Tencent Finance, and JD Finance, which are representative companies of China's financial technology sector.
- (2) Application of financial technology in financial regulation: Regtech is a firewall for risk prevention and control[9]. The application of financial technology in financial regulation mainly manifests in real-time monitoring of financial markets, risk warnings, anti-fraud, etc. For instance, using big data technology for risk assessment, employing artificial

intelligence for fraud detection, and utilizing blockchain technology to achieve transparent transaction supervision.

- (3) Practice of financial technology in rural revitalization: Utilizing financial technology methods to improve financial service levels in impoverished areas, aiding poverty alleviation efforts[10]. For example, using mobile payments and internet finance to increase financial service coverage in impoverished areas, helping residents achieve self-development.



Development History of China's Fintech Industry

With the joint advancement of the three fields, the development of China's fintech has formed a virtuous circle of innovative risk management and control. In terms of financial technology enterprises, the number and scale of China's financial technology companies have been growing annually, providing strong technical support for the financial industry. The corporate ecosystem has shifted from scale expansion to capability output[11]. As of 2023, unicorn enterprises with a valuation exceeding 1 billion US dollars account for 32% of the global total. State-owned investment financial institutions have exported various technical models to financial institutions around the world, while companies like Tencent have also taken the lead in participating in the formulation of global standards[12]. Regarding the application of financial technology in financial regulation, China's regulatory system is gradually improving, effectively preventing financial risks. Regtech has formed a Chinese-style intelligent risk control system for supervision. The regulatory sandbox has incubated 132 projects, most of which are applied to inclusive finance.[13] Meanwhile, the world's first digital regulatory reporting system has been created to realize automatic data capture. As for the practice of financial technology in rural revitalization, China has made remarkable achievements in rural revitalization, making important contributions to global poverty reduction efforts. Satellite remote sensing and AI models have covered 120 million rural long-tail users, and the penetration rate of mobile payment in rural areas has reached 87.7%.

2.2.3 Challenges and Problems Faced by Fintech Innovation in China

With continuous technological progress, financial technology innovation has become an important driving force for the development of the financial industry[14]. However, China's financial technology innovation still faces a series of issues and challenges that limit its speed and quality, affecting the construction of a financial power.

1. Insufficient innovation capability in financial technology.

Compared with developed countries, China's investment and research in financial technology innovation are still relatively insufficient. China's financial technology innovation mainly relies on introduction and imitation, lacking independent innovation capabilities[15]. Additionally, the talent reserve for financial technology innovation in China is relatively insufficient, with a shortage of high-end financial technology innovation talents, which affects the speed and quality of financial technology innovation.

2. Incomplete regulatory mechanisms.

The regulatory mechanisms for financial technology innovation in China are still incomplete, with inadequate regulatory efforts and many regulatory gaps. Some unscrupulous individuals exploit regulatory loopholes for financial fraud, severely impacting customers' confidence in financial technology innovation[16]. Moreover, the legal system for financial technology innovation in China is incomplete, lacking legal norms for financial technology innovation, making it difficult to provide strong legal protection for financial technology innovation.

3. Development of financial technology constrained by institutional restrictions.

China implements a 'separate operation, separate management' management model, which imposes severe institutional constraints on commercial banks' financial technology innovation. Furthermore, overly cautious credit approval policies by regulators and excessively strict capital adequacy ratio regulatory targets both limit the enthusiasm of commercial banks to engage in financial technology business.

4. Incomplete rating system for financial technology innovation.

China's rating system for financial technology innovation is still in its infancy and is in the exploratory stage[17]. This makes it difficult to effectively assess risks during financial technology innovation processes, affecting the quality and speed of financial technology innovation.

In summary, China's financial technology innovation faces numerous issues and challenges, requiring improvements in areas such as innovation capabilities, regulatory mechanisms, legal systems, institutional constraints, and rating systems to promote financial technology innovation and achieve the construction of a financial power.

2.3 Driving Factors and Key Technologies of Fintech Innovation

The driving factors of financial technology innovation include technological progress, policy environment, market demand, etc. Among them, technological progress is the fundamental driving force behind financial technology innovation.[18] Changes in the policy environment also affect financial technology innovation, directly influencing the direction and speed of its development. China's policy environment is characterized by strategic guidance and dynamic supervision.[19] As of 2023, the localization replacement rate of distributed databases for bank core systems has reached 68%. Changes in market demand are another important factor driving financial technology innovation. Market demand is transforming from one-size-fits-all coverage to segmented and precise supply. C-end demand is upgrading from basic payment to digital twin wealth management. The structural gap on the B-end is driving technological innovation[20]. The emergence of new financial models such as internet finance and mobile finance poses new challenges to traditional financial institutions, promoting the development of financial technology innovation.



The proportion of the number and amount of investment and financing events exceeding 100 million yuan to the total number and total amount respectively (by sub-industry)

This study focuses on the core technology clusters that underpin the digital transformation of finance and their transformative impacts. At the level of technological empowerment, three pillar innovations are reshaping the underlying logic of the financial industry[21]: Artificial intelligence drives a cognitive revolution in finance. Based on transfer learning algorithms, financial institutions construct 360° panoramic portraits of customers, realizing a leap in demand forecasting from passive response to active prediction. Big data reconstructs financial decision-making paradigms[22]. With the help of streaming computing engines and graph database technologies, financial systems achieve real-time value mining of massive heterogeneous data. Cloud computing lays the foundation for new infrastructure of financial services. Financial-grade cloud-native architecture breaks through the bottlenecks of the traditional IOE system, achieving two major leaps: 1. System elasticity. 2. Cost restructuring. In summary[23], artificial intelligence is evolving from shallow rule understanding to in-depth analysis, which has greatly improved the accuracy of Bank of China's prediction of users' product needs. Cloud computing technology has reduced the operation and maintenance costs of commercial banks to one-fifth of those of traditional banks. Changes in the policy environment and social environment also influence financial technology innovation, promoting its development. Unlike the principle of technological neutrality adopted by European and American countries, Chinese regulators proactively guide the direction of innovation. The central bank's regulatory sandbox has prioritized blockchain-based supply chain finance for pilot projects, and continuously shortened the risk assessment cycle through simulation testing platforms. In the future, financial technology innovation will continue to develop, providing new impetus and possibilities for the development of the financial industry.

3 Theoretical Basis and Practical Exploration of China's Financial Power

Construction

3.1 Theoretical Basis of Financial Power Construction.

The fundamental requirements for building a financial power mainly manifest in five aspects: first, a strong market, where a robust financial market is a basic characteristic of a financial power; second, strong institutions, where powerful financial institutions form the organizational foundation of a financial power; third, strong talent, where a powerful financial workforce is a fundamental element of a financial power; fourth, strong infrastructure, where robust financial infrastructure is an important support for a financial power; fifth, strong systems, where powerful financial systems and mechanisms are crucial safeguards for a financial power[1].

Key tasks to accelerate the construction of a financial power include[10, 15]: 1) Establishing and improving the financial regulatory system. All financial activities should be fully included in regulation according to law, effectively enhancing the effectiveness of financial regulation, and actively participating in international financial regulatory cooperation; 2) Improving the modern financial institution system, deepening the supply-side structural reform of finance; 3) Improving the modern financial market system. Strengthening market rules, promoting the formation of long-term capital, focusing on advancing high-level financial openness, and increasing the internationalization of the RMB through various means; 4) Improving the financial infrastructure service system; 5) Improving the financial legal system, quickly issuing local financial regulatory laws and regulations, accelerating the legislative process of the Financial Stability Law, and severely cracking down on illegal financial activities; 6) Strengthening the construction of financial talent and cadre teams.

3.2 Practical Exploration and Achievements of China's Financial Power Construction

3.2.1 Practical Exploration

In terms of policy support, the Chinese government has introduced a series of policies that provide strong backing for building a financial powerhouse. The government has increased its support for financial technology innovation, encouraging financial institutions to leverage technological advancements to enhance service levels.[24] Additionally, it encourages the opening up of the financial sector, creating an internationalized environment for the construction of a financial powerhouse[6]. The Fintech Development Plan of the State Council clearly defines two paths: data factorization and technological autonomy. Meanwhile, tax reductions and exemptions are implemented in 15 national-level fintech innovation demonstration zones such as Xiong'an and Suzhou.

Regarding financial reform, the Chinese government has advanced a series of financial reforms aimed at optimizing the financial system and improving service efficiency. The government has promoted interest rate liberalization to reduce financing costs for the real economy. Furthermore, it has pushed for financial regulatory reforms to strengthen oversight of financial markets, prevent financial risks, and ensure stable market operations.

In terms of financial innovation, China's financial industry actively engages in financial innovation to improve service levels. The banking sector has launched various new financial products such as internet banks and mobile payments to meet diverse customer needs[25]. Additionally, the securities industry has introduced innovative products like convertible bonds and ETFs to enrich investment options for investors. A representative innovative achievement of banks is the integration of satellite remote sensing with AI-based credit, which has reduced the non-performing loan ratio of rural unsecured loans to 1%. In the securities field, blockchain platforms have been used to lower securitization costs. In the insurance industry, IoT-based health insurance has increased the participation rate of chronic disease insurance by more than 50%[26]. In cross-border finance, the central bank's digital currency bridge has reduced cross-border clearing fees to \$0.1 per transaction.

3.2.2 Achievements

The study finds that financial technology innovation has produced three structural transformation effects: 1. Upgrade of financial service paradigm: Innovative products such as intelligent investment advisory and scenario-based insurance have promoted the transition of service models from standardization to adaptive personalization. 2. Reconstruction of market stability mechanism: The application of regulatory technology has realized the transformation of risk prevention and control from lagging disposal to real-time immunity. 3. Optimization of the financing ecology of the real economy: Under the synergistic effect of interest rate marketization and AI risk control, a channel for reducing inclusive financing costs has been formed.

4 Synergistic Evolution Mechanism between Fintech Innovation and the Construction of China's Financial Power

4.1 Symbiotic Relationship between Fintech Innovation and the Construction of Financial Power

Fintech innovation and the construction of a financial power form a synergistic evolution system of "technology empowerment - institutional adaptation - ecological leap". The two form a development closed loop through two-way feedback: Positive drive: Fintech reconstructs financial infrastructure through technologies such as distributed ledgers and federated learning, providing a computing power base for a financial power.[27]. Reverse empowerment: The strategy of building a financial power, through institutional designs such as policy sandboxes and national standards, opens up an innovation test field for fintech.

4.1.1 Technical Base: From Tool Support to System Reconstruction

Intelligent risk control revolution: AI integrates more than 5,000 weak feature variables, reducing the non-performing loan rate of rural household loans in MYBank to 1.05%; Cross-border clearing leap: Blockchain-based mBridge compresses the cost of cross-border clearing from \$25 per transaction to \$0.1 per transaction, promoting the share of RMB settlement to 6.1%.

4.1.2 Fintech innovation provides abundant innovative impetus for the construction of a financial power.

Financial technology innovation can not only drive innovation and development in the financial industry but also promote innovation and development in the real economy. Financial technology innovation provides more financing channels and methods for the real economy, making its development more efficient and convenient[28]. At the same time, financial technology innovation offers new models and paths for the construction of a financial power, making the construction of a financial power more vibrant and dynamic.

4.1.3 Fintech innovation provides a favorable development environment for the construction of a financial power.

Efficiency dimension: The penetration rate of mobile payment reaches 98% (the highest in the world), and the cost per payment drops to 0.001 yuan[29]. stability dimension: The People's Bank of China's "Fengling System" shortens the time for early warning of illegal fund-raising from 14 days to 2.1 hours.

4.2 Strategic Empowerment of Fintech to the Construction of Financial Power

4.2.1 Financial Hard Power: A Leap in Resource Allocation Efficiency

Fintech enhances national financial competitiveness through "reconstruction of three flows".

4.2.2 Innovative Soft Power: Genetic Evolution of Financial Ecology

Product innovation: 7 types of new tools such as digital bonds and carbon futures ETFs fill market gaps; Service reconstruction: The penetration rate of robo-advisory reaches 38%, serving more than 500 million long-tail customers; Institutional breakthrough: The world's first issuance of "Open Banking API Security Specifications". Quantitative verification: For every 10% increase in fintech penetration, the financial system competitiveness index increases by 0.8 points; Chinese practice: The digital RMB pilot has promoted the efficiency of cross-border trade settlement by 200%, providing a technical model for emerging markets.

4.2.3 Improving the scientific nature of China's financial decision-making and the ability to prevent financial risks

In new financial institutions, Ant Financial from Alibaba and Tenpay from Tencent have started using big data to establish their own risk control systems.[30] Many commercial banks have also developed purely online credit products based on the data they possess. These online credit products mainly analyze comprehensive information by integrating static data such as customers' basic information, historical records, and behavioral preferences, along with dynamic data such as transaction and social information. By searching for sensitive keywords, they create a credit profile for each customer and grant corresponding credit limits based on this profile, thereby enhancing risk prevention capabilities. In summary, financial technology innovation has a significant impact on the construction of China's financial power[31].

4.3 Practical Paths for Fintech Innovation to Assist in Building a Financial Power

4.3.1 Giving Full Play to the Key Role of Fintech Innovation in Supporting the Real Economy

Fintech needs to focus on the three-dimensional integration of "technology - industry - capital" to realize a closed loop of value transformation: Intelligent industrial-financial collaboration platform: The blockchain-based supply chain bill platform enables the credit of core enterprises to penetrate to the fourth-tier suppliers; Agricultural digital twin system: Integrating satellite remote sensing and meteorological AI models, it dynamically generates crop growth index insurance, reducing farmers' income fluctuations by 56%. Green finance hub: An ESG data

engine is built, with carbon footprint tracking covering 80% of listed companies, guiding hundreds of billions of funds to flow into low-carbon industries.

4.3.2 Consolidating the Construction of Financial Infrastructure.

The modernization of financial infrastructure requires the implementation of a dual-track strategy of "breakthroughs in hard technology + innovation in soft rules" to build a systematic foundation supporting the goal of a financial power: 1. Deployment of quantum secure communication networks, construction of distributed clearing hubs, and heterogeneous computing power integration platforms: Integrating GPU clusters and neuromorphic chips to increase the efficiency of risk model training by 400%. 2. Coding of regulatory rules: In the pilot of Shenzhen's "Hive System", 127 regulatory rules were compiled into smart contracts to realize automatic policy execution; Market-oriented mechanism for data elements: The country's first financial data right confirmation and trading platform was established to solve the problem of data silos, with the transaction volume exceeding 8 billion yuan in the first year;

4.3.3 Promoting the Leapfrog Development of the Internet Finance Industry

In summary, financial technology innovation is an important means for building a strong financial nation in China and a key factor in achieving high-quality economic development[32].

5 Case Analysis of Fintech Innovation and the Construction of China's

Financial Power

5.1 Case 1: Analysis of the Development Practice of China's Fintech Enterprises.

Taking JD Finance as an example, this financial technology company, established in 2013, has been committed to using technology to transform finance since its inception. From financial decision-making service platforms, insurance platforms to products like Bai Card and Bai Bar, JD Finance always focuses on user needs, continuously launching financial products and services that meet market demands. In terms of technology, JD.com has independently developed the Zeus distributed database to support 500,000 transactions, reducing costs by 60% compared with the traditional IOE system. Through the federated learning risk control platform, it has connected data from more than 2,000 financial institutions, controlling the credit non-performing loan ratio of small, medium and micro enterprises at 1.35%.

Moreover, other financial technology companies such as Baidu Finance and Suning Finance have also achieved significant results in terms of their development process, technological innovation, and market performance[18]. The growth of these enterprises not only promotes the innovative development of China's financial technology but also provides strong support for building a powerful financial nation in China. China's fintech has completed the upgrade from technological substitution to rule output, and has become the core driving force for building a financial power.

5.2 Case 2: An analysis of the application cases of China's fintech in financial supervision.

China should continue to strengthen the application of financial technology in financial regulation, promoting the continuous development of China's financial technology and the construction of a financial power[17]. Xiamen's breakthrough in blockchain technology adopts a ternary governance structure, reducing the delay in credit data sharing from 72 hours to 5 seconds, and significantly increasing the lending rate.

5.2.1 Blockchain Technology

Blockchain technology, due to its decentralized nature, security, reliability, and immutability, has been widely applied in the field of financial regulation[33]. For example, China's first commercial platform for blockchain regulatory technology, 'Xiamen 'Xin e Dai' Micro-loan Credit Information Sharing Platform,' uses blockchain technology to share micro-loan credit information, effectively enhancing the efficiency and accuracy of financial regulation.

5.2.2 Big Data Technology

The application of big data technology in financial regulation mainly manifests in risk management, anti-money laundering, and compliance audits. For example, Ant Financial has established a quantitative personal and corporate credit evaluation model through big data technology, effectively improving the identification and control of financial risks[34]. The innovation of Ant Group's Yijian System integrates weakly related data such as tax, logistics, water and electricity. The recognition rate for illegal fund-raising and shadow banking infiltration has been raised to over 90%.

5.2.3 Artificial Intelligence Technology

The application of artificial intelligence technology in financial regulation mainly manifests in customer identity verification, risk screening, and anti-money laundering. For example, JD Finance uses artificial intelligence technology for collecting and verifying customer information, and establishes an anti-money laundering model based on a complete KYC process, effectively improving the accuracy and efficiency of financial regulation[1, 35]. The dynamic stress test of the central bank's Fengling Intelligent Supervision System has simulated more than 200 financial crisis scenarios through generative adversarial networks, advancing the early warning timeliness for cross-border capital flow monitoring to 3 hours in advance.

5.2.4 Internet of Things Technology

The application of Internet of Things (IoT) technology in financial regulation mainly manifests in agricultural production financial services and cross-border settlement payments. For example, the blockchain credit project built jointly by Golden Hill Technology and UnionPay Business—Xiamen 'Xin e Loan' small loan credit information sharing platform—achieves real-time sharing of small loan credit information through IoT technology, effectively enhancing the efficiency and accuracy of financial regulation[36]. By integrating blockchain with live collateral and deepening such integration, the credibility of chattel ownership confirmation has been raised from 50% to 99%, while the risk loss of mortgage financing has dropped to 76%.

5.3 Case 3: Analysis of the Practice of Fintech in Financial Work for Rural Revitalization

Firstly, financial technology has improved the effectiveness of rural revitalization. The application of financial technology not only enhances the efficiency of financial services but also effectively boosts the impact of financial support on rural revitalization. Additionally, the application of financial technology can effectively monitor the use of rural revitalization funds, preventing waste and loss[24]. Technological means have solved the predicament of rural finance. The air-space-ground integrated credit model has enabled more than 13 million farmers to obtain loans, with an average loan amount of 32,000 yuan per household. Fruit growers have reduced losses by at least 67% through rainfall index insurance.

Secondly, the application of financial technology in financial innovation. Chinese financial institutions are continuously exploring ways to empower finance through technology in rural revitalization work. Through technological innovation, they have promoted the in-depth development of rural revitalization efforts. For instance, some financial institutions have started establishing their own fintech subsidiaries, and some innovative financial products have been introduced to impoverished areas, providing financial support to some poor residents.

Lastly, the application of financial technology in financial regulation. In China's rural revitalization work, it is necessary to rely on information technology to establish electronic archives for financial support in rural revitalization. This includes setting up a set of financial support archives for impoverished households and small and micro enterprises in impoverished areas. On one hand, this allows for dynamic tracking of the progress of rural revitalization efforts and feedback on their effectiveness. On the other hand, it helps prevent the waste and loss of rural revitalization funds, positively contributing to targeted rural revitalization. The system integrating blockchain with financial subsidies has realized the function of precise targeting to households, with the fraudulent claim rate approaching 0%. Meanwhile, the fund traceability function has reduced the approval cycle from one month to real-time. Through the effect evaluation function, the income data of poor households are automatically linked back, and the response speed of policy adjustment has been increased to over 90%.

In summary, the practical application of financial technology in rural revitalization work has not only improved the efficiency of financial services but also significantly enhanced the impact of financial support on rural revitalization, promoting its in-depth development and providing strong support for building a financial power in China.

6 Conclusions and Prospects

6.1 Conclusions

6.1.1 Fintech innovation is an important means to build a financial power

Financial technology innovation can improve the efficiency and convenience of financial services, reduce the costs of financial transactions, and also better meet the needs of social and economic development. The value of fintech innovation is mainly reflected in the restructuring of technical architecture, the reform of risk pricing, and the strengthening of China's currency autonomy.

6.1.2 Fintech innovation plays an important role in promoting the transformation and upgrading of the real economy.

Financial technology innovation can effectively address issues such as difficult and expensive financing for the real economy, promoting structural adjustments and industrial upgrading of the real economy. Transform from financing difficulties to industrial structure reshaping. For example, through financial technologies like supply chain finance and blockchain.

6.1.3 Fintech innovation is of great significance to the construction of a financial power.

In terms of security, it has greatly increased the early warning time. In terms of inclusiveness, the coverage rate of mobile payments in rural counties exceeds 90%. China has also taken the

lead in participating in the formulation of some international standards. For example, through financial technology means, we can achieve real-time payments and settlements, greatly enhancing the efficiency of capital circulation; by using big data and artificial intelligence technologies, financial institutions can better understand customer needs and provide more personalized financial services.

6.1.4 The development of fintech innovation requires policy guidance and support.

The government should introduce a series of policies for financial technology innovation to encourage and guide financial institutions and tech companies to engage in such innovations, thereby promoting the development of financial technology innovation. At the same time, the government should strengthen risk regulation of financial technology innovation to prevent potential risks associated with it. Overall, financial technology innovation is an important means to achieve a strong financial nation, playing a crucial role in the transformation and upgrading of the real economy and being significant for the construction of a strong financial nation.

6.2 Research Limitations and Future Prospects

This study, it has conducted an in-depth analysis of financial technology innovation and the construction of China's financial power from a global perspective, still has some limitations. Firstly, the research mainly relies on existing theories and practices, and may not have comprehensively explored specific implementation paths and strategies for financial technology innovation and the construction of China's financial power. Make breakthroughs in the technological ecosystem that is "bottlenecked" in the fields of computing independence, data sovereignty, and algorithm ethics. Secondly, the focus of this study is on the impact of financial technology innovation on the construction of China's financial power, but it may not have deeply analyzed the internal mechanisms and driving forces of financial technology innovation. Construct a interdisciplinary framework for fintech, and conduct integrated innovation research in technical omics, behavioral omics, and institutional omics. Lastly, the study primarily focuses on the positive impacts of financial technology innovation on the construction of China's financial power, and may not have sufficiently discussed potential negative effects and challenges. Develop a crisis resilience preview system, conduct pre-drills based on 300 crisis scenarios trained by the national financial warfare deduction platform, and enhance prevention and control capabilities.

Looking ahead, we believe that research on financial technology innovation and the construction of China's financial power can be further deepened and expanded in several aspects. Firstly, further exploration of specific implementation paths and strategies for financial technology innovation and the construction of China's financial power can provide clearer directions and paths for the construction of China's financial power. Secondly, a deeper analysis of the internal mechanisms and driving forces of financial technology innovation can provide more theoretical support for China's financial technology innovation.

6.3 Recommendations for Policy Makers

6.3.1 The government should increase investment in fintech innovation.

Financial technology innovation is a crucial driving force for financial development, and government support and investment are key to promoting financial technology innovation. The

government can encourage financial institutions and tech companies to engage in financial technology innovation by setting up special funds and providing tax incentives. By establishing a national fintech fund, risk subsidies are provided for early-stage technology investments. Strengthen incentives for talent capitalization and provide subsidies to scientific and technological personnel. Upgrade the regulatory sandbox, deploy quantum computing simulation environment stress tests through technical penetrative testing, and allow 30% of trial-and-error costs for failures in basic technology research and development.

6.3.2 The government should further improve the financial market.

The improvement of financial markets is an important foundation for promoting financial technology innovation. The government should strengthen the construction of financial market infrastructure, enhance market transparency and efficiency. At the same time, the government should also intensify supervision over financial markets to prevent disorder and risks. Accelerate the establishment of a confidential communication network for financial magnitude, and reduce the delay in transaction verification and calculation. Enhance the capability of the regulatory chain through transparent market governance, make the flow of implemented funds transparent, and rate the risks of institutions, so that the money laundering identification rate can be increased to 99% and the deviation of risk pricing can be reduced to 58%.

6.3.3 The government should increase support for technology-based small and medium-sized enterprises.

Technology-oriented small and medium-sized enterprises are crucial forces driving technological innovation, and government support for these enterprises is key to promoting technological innovation. The government can support the development of technology-oriented SMEs by establishing special funds and providing tax incentives. Additionally, the government should strengthen supervision over technology-oriented SMEs to prevent their development from being hindered. Implement a gradient cultivation mechanism for small and medium-sized enterprises, and encourage them through measures such as free access to computing power of the national supercomputing center, reserving 30% of government procurement contracts, and opening up green channels for scientific and technological innovation.

6.3.4 The government should strengthen international cooperation in fintech innovation.

Financial technology innovation is a global trend, and international cooperation is an important way to promote financial technology innovation. Governments should strengthen cooperation with other countries in the field of financial technology innovation and share the fruits of technological innovation. Export digital inclusive terminals and regulatory chain solutions to countries in Southeast Asia and other regions, establish a market digital currency stabilization fund to deal with financial turmoil caused by cryptocurrencies, improve the Digital Silk Road countermeasure plan, and when the United States restricts chip exports, launch a plan to export domestic cloud computing infrastructure to European, African and other countries to cope with the crisis. In general, financial technology innovation is a crucial driving force for building a strong financial nation in China, and the support and guidance from policymakers are key to promoting financial technology innovation. Only when policymakers fully recognize the importance of financial technology innovation and take effective measures to promote it can the goal of building a strong financial nation in China truly be achieved.

References

1. Ha, L.T., *Wavelet connectedness between FinTech innovation, artificial intelligence development, and blue economy performance during the COVID-19 pandemic and the Ukraine-Russia tension*. DISCOVER SUSTAINABILITY, 2025. **6**(1).
2. Lakstutiene, A., R. Krusinskas, and J. Narbutiene, *The Development of FinTech Innovations Globally and Indicators in Small Countries: Case of Lithuania*, in *2016 3RD INTERNATIONAL CONFERENCE ON MANAGEMENT INNOVATION AND BUSINESS INNOVATION (ICMIBI 2016), PT 2*. 2016. p. 27–32.
3. Zavolokina, L., M. Dolata, and G. Schwabe, *FinTech Transformation: How IT-Enabled Innovations Shape the Financial Sector*, in *ENTERPRISE APPLICATIONS, MARKETS AND SERVICES IN THE FINANCE INDUSTRY, FINANCECOM 2016*. 2017. p. 75–88.
4. Gomber, P., et al., *On the Fintech Revolution: Interpreting the Forces of Innovation, Disruption, and Transformation in Financial Services*. JOURNAL OF MANAGEMENT INFORMATION SYSTEMS, 2018. **35**(1): p. 220–265.
5. Young, L.J., *Policies and Strategic Directions for Fintech Development in Korea*. 핀테크 산업 확대에 따른 정책과제와 발전방향. The Journal of Korean Institute of Communications and Information Sciences, 2018. **43**(9): p. 1550–1560.
6. Lee, I. and Y.J. Shin, *Fintech: Ecosystem, business models, investment decisions, and challenges*. BUSINESS HORIZONS, 2018. **61**(1): p. 35–46.
7. Choi, J.-Y., K. Kim, and K. Miri, *The Typology for Understanding Fintech Innovation: Focusing on Value*. 핀테크 혁신의 이해를 위한 유형 분류: 가치를 중심으로. korean management review, 2019. **48**(5): p. 1303–1329.
8. Xu, J., et al., *Does Fintech Foster the Development of Green Finance?* EMERGING MARKETS FINANCE AND TRADE, 2025. **61**(6): p. 1771–1781.
9. Chin, T., et al., *How China's urban innovation system promotes green finance via FinTech: a connectivity view*. ASIA PACIFIC BUSINESS REVIEW, 2025.
10. Zeng, T. and Y. Jiang, *Fintech and low-carbon urban development*. FINANCE RESEARCH LETTERS, 2025. **79**.
11. Ahmad, R., et al., *FinTech innovation, stability and efficiency: Evidence from Malaysian bank industry*. INTERNATIONAL JOURNAL OF FINANCE & ECONOMICS, 2025. **30**(1): p. 221–241.
12. Al-Omoush, K.S. and N.S. Alghusini, *Exploring the organizational and social drivers of social media analytics: the domino effect in Fintech innovation*. INTERNATIONAL JOURNAL OF ACCOUNTING AND INFORMATION MANAGEMENT, 2025. **33**(2): p. 407–424.
13. Yan, K., et al., *How does FinTech enable the expansion of green innovation boundaries: Evidence from the interventions of China's environmental protection tax law*. ENERGY ECONOMICS, 2025. **144**.

14. Jia, F., et al., *Does Fintech Adoption Improve Sustainable Supply Chain Management? An Innovation-Intensive Environment Perspective*. IEEE TRANSACTIONS ON ENGINEERING MANAGEMENT, 2025. **72**: p. 210–226.
15. Feridun, M., *Green finance: do innovation, fintech and financial transparency play a role?* APPLIED ECONOMICS LETTERS, 2025. **32**(2): p. 157–160.
16. Li, Y., et al., *Fintech, financing constraints and corporate green innovation*. INTERNATIONAL REVIEW OF FINANCIAL ANALYSIS, 2024. **96**.
17. Wang, D., B. He, and Z. Hu, *Financial technology and firm productivity: Evidence from Chinese listed enterprises*. FINANCE RESEARCH LETTERS, 2024. **63**.
18. Del Gaudio, B.L., S. Gallo, and D. Previtali, *Exploring the drivers of investment in Fintech: Board composition and home bias in banking*. GLOBAL FINANCE JOURNAL, 2024. **60**.
19. Rizvi, S.K.A., et al., *Revolutionizing finance: The synergy of fintech, digital adoption, and innovation*. TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE, 2024. **200**.
20. Liao, K., et al., *Does big data infrastructure development facilitate bank fintech innovation? Evidence from China*. FINANCE RESEARCH LETTERS, 2024. **65**.
21. Allen, H.J., *Regulating fintech: A harm focused approach*. COMPUTER LAW & SECURITY REVIEW, 2024. **52**.
22. Wang, L., et al., *How does Fintech affect green innovation of Chinese heavily polluting enterprises? The mediating role of energy poverty*. ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH, 2023. **30**(24): p. 65041–65058.
23. Chen, X., W. Chen, and K. Lu, *Does an imbalance in the population gender ratio affect FinTech innovation?* TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE, 2023. **188**.
24. Caragea, D., et al., *Identifying FinTech Innovations Using BERT*, in 2020 IEEE INTERNATIONAL CONFERENCE ON BIG DATA (BIG DATA). 2020. p. 1117–1126.
25. Zhao, J., et al., *Riding the FinTech innovation wave: FinTech, patents and bank performance*. JOURNAL OF INTERNATIONAL MONEY AND FINANCE, 2022. **122**.
26. Wang, H., et al., *Classification of FinTech Patents by Machine Learning and Deep Learning Reveals Trends of FinTech Development in China*. MATHEMATICAL PROBLEMS IN ENGINEERING, 2022. **2022**.
27. Du, J., X. Chen, and L. Yu, *Can Executives with IT Background Promote FinTech Innovation?* Chinese Journal of Management Science, 2023. **31**(12): p. 69–78.
28. Cao, Y., et al., *Does FinTech Constrain Corporate Misbehavior? Evidence from Research and Development Manipulation*. EMERGING MARKETS FINANCE AND TRADE, 2023. **59**(10): p. 3129–3151.
29. Chen, X., *Information moderation principle on the regulatory sandbox*. ECONOMIC CHANGE AND RESTRUCTURING, 2023. **56**(1): p. 111–128.
30. Caragea, D., et al., *Competition and Innovation in the Financial Sector: Evidence from the Rise of FinTech Start-ups*. JOURNAL OF FINANCIAL SERVICES RESEARCH, 2024. **65**(1): p. 103–140.

31. Ha, L.T., *Dynamic spill-over influences of FinTech innovation development on renewable energy volatility during the time of war in pandemic: A novel insight from a wavelet model*. ECONOMIC ANALYSIS AND POLICY, 2024. **82**: p. 515–529.
32. David, L.K., et al., *Fintech as a catalyst for innovation and sustainable growth: analyzing the dynamics of R&D Investment in China*. ASIAN JOURNAL OF TECHNOLOGY INNOVATION, 2024.
33. Baig, M.H., et al., *Revealing the potential of FinTech innovation through knowledge assets: a study of firm financial performance*. INTERNATIONAL JOURNAL OF INNOVATION SCIENCE, 2025. **17**(3): p. 650–682.
34. Fan, H., et al., *Does fintech facilitate enterprise outward foreign direct investment? Evidence from China*. JOURNAL OF INTERNATIONAL TRADE & ECONOMIC DEVELOPMENT, 2025. **34**(4): p. 849–868.
35. Le, V. and B.K.Q. Nguyen, *Is the Fintech Era Making Us Happy?* SOCIAL INDICATORS RESEARCH, 2025.
36. Kaefer, F., G.L. Mora, and N.J.C. Santos, *Socially Responsible Fintech Using Open Social Innovation*. JOURNAL OF MACROMARKETING, 2025. **45**(1): p. 105–112.