The Impact of FinTech on the Financing Capacity of Small and Micro Enterprises

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Abstract. With the rapid growth of China's economy, the contradiction between the high participation of small and micro enterprises (SMEs) and the low level of financial support they receive has become increasingly prominent. Although the government has introduced numerous policies to encourage financial institutions to support the development of SMEs, the results have been limited. However, with the rapid advancement of financial technology (FinTech), the integration of finance and technology has helped alleviate the financing difficulties faced by SMEs and promote their sustainable growth. FinTech has now become a powerful driving force for reform and innovation in the financial sector, significantly enhancing the service capacity of financial markets. To better understand how FinTech influences the financing capabilities of SMEs—and, in turn, to more effectively analyze the contribution and participation of SMEs within the financial sector—this study examines the current development of SMEs in China, the evolution of China's FinTech industry, and the impact of FinTech on SME development.

Keywords: FinTech; Small and Micro Enterprises; Financing Capacity

1 Introduction

Small and micro enterprises (SMEs) serve as the backbone of China's economic development and are a vital source of market vitality. According to official statistics, SMEs play a dominant role in the national economy, accounting for approximately 68% of industrial output, 59% of total sales revenue, and 44% of total profits and taxes, while contributing to 27% of total employment. SMEs encompass small enterprises, microenterprises, and individual businesses with diverse ownership and organizational structures. According to China's official classification standards, they are categorized by employment size, capital, and total assets, as shown in Table 1.

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Table 1. Classification of Small and Micro Enterprises by Industry and Asset Scale

Industry	Employees	Total Assets / Total Capital Value (million RMB)
Construction	≤ 3,500	Assets of approximately 450 million RMB or total capital value of around 500 million RMB
Manufacturing	≤ 2,500	Assets of approximately 300 million RMB or total capital value of around 450 million RMB
Wholesale	≤ 300	Assets of approximately 150 million RMB
Retail	≤ 600	Assets of approximately 320 million RMB
Transportation	≤ 3,000	Assets of approximately 450 million RMB
Accommodation and Catering	≤ 1,000	Assets of approximately 500 million RMB
Postal Services	≤ 800	Assets of approximately 120 million RMB

Reducing financing costs is essential to alleviating the funding constraints faced by SMEs. Lower financing expenses can stimulate investment, enhance economic vitality, and promote sustainable growth. Accordingly, various policy measures—such as credit guarantees, tax incentives, and targeted financial instruments—have been introduced to ease structural financing barriers for SMEs. The definition of small and micro enterprises is presented in Table 2.

Table 2. Definition of Small and Micro Enterprises

Item	Description
Concept	The small and micro enterprise
Proposer	Lang Xianping
Classification	Small-sized, medium-sized, and micro-sized enterprises
Legal Basis	Law of the People's Republic of China on the Promotion of SMEs
Development Significance	Aims to address issues such as financing difficulties faced by SMEs

With the rapid development of Internet-based financial technologies, China's market economy has entered the era of big data. To adapt to this transformation, SMEs have transitioned from traditional business models to more data-driven and technology-oriented strategies. While these advancements have created favorable conditions for SME growth, many still face persistent financing constraints due to lagging technological innovation and limited access to financial resources.

SMEs play a vital role in China's economy, accounting for 68% of industrial output, 59% of total sales revenue, and 44% of total profits and taxes, while contributing to 27% of total employment. Reports indicate that in coastal regions, SMEs make up 23.3% of all enterprises. In major economic centers such as Beijing, Shanghai, and Guangzhou, the number of SMEs exceeds 350 in each cluster. The Chinese government has promoted policy measures requiring banks to increase lending to SMEs, with average annual growth in loan balances of around six trillion RMB, reaching ten trillion

RMB by early 2021. As a result, SMEs' financial health has improved, with outstanding loans reaching 15 trillion RMB in 2017, marking a 25% year-on-year increase.

Nevertheless, SMEs continue to face systemic challenges, such as limited access to advanced technologies, weak legal support, and underdeveloped financial service systems. The outbreak of COVID-19 exacerbated these difficulties by restricting trade activities and disrupting supply chains [1]. In response, the National Development and Reform Commission (NDRC) and the Ministry of Finance introduced policies to extend repayment terms, expand loan limits, and lower interest rates, helping SMEs maintain stability and achieve gradual transformation.

2 The Development Process and Current Status of Financial Technology

2.1 Historical Evolution of FinTech

The development of FinTech can be divided into four stages: 1)FinTech 1.0 (Banking Digitalization Stage): Characterized by the automation of basic banking operations; 2)FinTech 2.0 (Credit and Clearing Systems): Focused on credit management and payment clearing infrastructure; 3)FinTech 3.0 (Internet Finance Era): Marked by widespread use of online payment, trading, and wealth management systems ;4)FinTech 4.0 (Intelligent Finance Era): Driven by big data, artificial intelligence, cloud computing, and blockchain, reshaping the entire financial landscape.

2.2 FinTech Tools and the Application of Related Enterprises

The advancement of FinTech depends on the continual evolution of core digital tools [2]—particularly big data, cloud computing, and blockchain—which are reshaping financial services, risk management, and credit evaluation [3]. Their integration has greatly enhanced the accessibility and efficiency of finance, especially for SMEs [4].

(1)Big Data Finance

Big data refers to massive, complex datasets that require advanced analytics to extract insights. In finance, big data analytics enables financial institutions to understand customer behavior, assess credit risk, and enhance decision-making efficiency. In banking, big data supports the creation of detailed user profiles covering income, spending patterns, and risk preferences, enabling personalized services, automated credit assessment, and real-time marketing [5]. In the securities sector, it aids client segmentation, churn prediction, and portfolio optimization [6]. In insurance, big data underpins fraud detection, dynamic pricing, and personalized underwriting by analyzing claims and behavioral data, thereby enhancing operational efficiency and profitability.

(2)Cloud Computing and Cloud Finance

Cloud computing refers to an IT service model that provides computing, storage, and networking resources on demand via virtualization technology. In financial services, cloud finance allows institutions to centralize resources, achieve scalability, and reduce operational costs. Cloud-based platforms support real-time resource allocation,

ensuring that financial services can dynamically adjust to fluctuations in user demand. Cloud computing also facilitates the rapid deployment of FinTech applications, supporting functions such as mobile banking, digital payment systems, real-time risk monitoring, and cross-platform financial integration. This shift to cloud infrastructure enhances both flexibility and resilience within financial institutions.

2.3 The Current State of FinTech Development in China

China's FinTech industry has rapidly evolved, with traditional institutions expanding technology investment, Internet-based firms undergoing strategic transformation, and emerging fields such as InsurTech, blockchain finance, and digital currencies flourishing.

(1)Development of FinTech Enterprises

Over the past five years, global financial institutions have steadily increased their investment in information technology (IT). As shown in Figure 1, total IT expenditure in the financial industry rose from USD 207 billion in 2015 to USD 260 billion in 2019, with the growth rate peaking at 12.6% in 2018. Although it slightly declined in 2019, the overall trend indicates that traditional financial institutions are accelerating digital transformation through continuous technological investment [7].

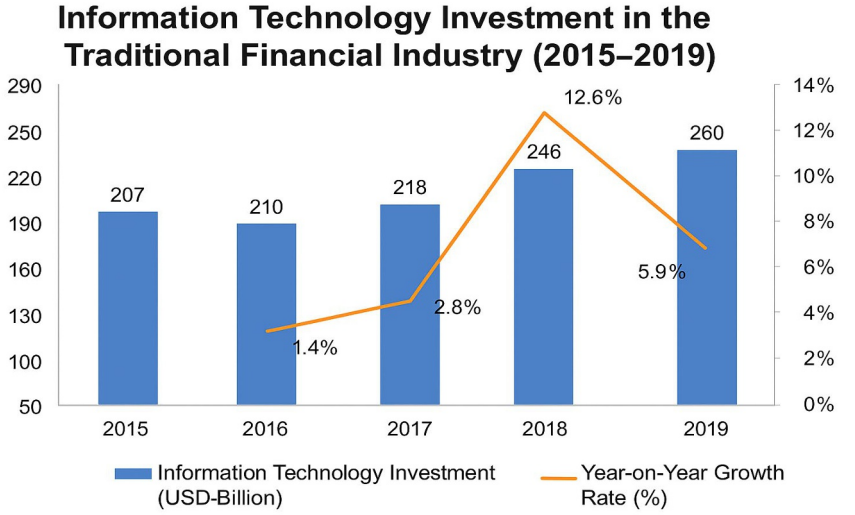

Fig. 1. Information Technology Investment in the Traditional Financial Industry

Despite inherent challenges, traditional financial institutions worldwide are actively embracing FinTech to reduce costs and improve efficiency, aiming to strengthen competitiveness and mitigate market risk. This shift highlights the growing importance of technology as a driver of structural reform and innovation in the global financial sector.

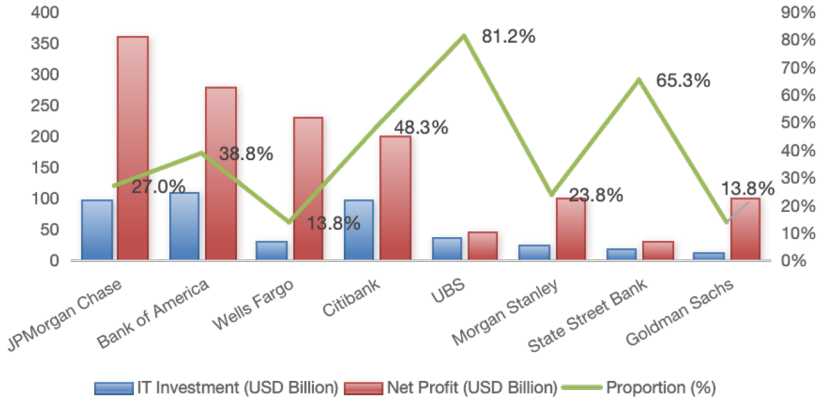

Fig. 2. IT Investment in Foreign Traditional Financial Institutions

Figure 2 illustrates the wide variation in IT investment among foreign financial institutions, reflecting differing levels of digital maturity. For example, UBS remains highly reliant on traditional finance, suggesting limited transformation capacity, while Wells Fargo shows balanced progress through deeper FinTech integration. In China, major banks have followed similar paths by establishing FinTech subsidiaries to boost innovation and efficiency. Since 2019, the People's Bank of China (PBoC) has led this transformation by setting up subsidiaries in Shenzhen, the Pearl River Delta, and the Yangtze River Delta. Supported by national policies since 2018, institutions such as Agricultural Bank of China, China Merchants Bank, and Ping An Bank have accelerated FinTech development, strengthening China's financial competitiveness.

(2)Advancement of Cutting-Edge Innovation by FinTech Companies

Representative Internet financial technology companies such as JD Finance, Baidu Finance, Ant Financial, and Xiaomi Finance have successively rebranded themselves, placing greater emphasis on the development of FinTech innovation and investment to expand their business influence [8]. This collective transformation among leading Internet financial enterprises demonstrates both the development trends and the innovative capacity of China's Internet finance industry. Table 3 illustrates the transformation of major Chinese FinTech enterprises from traditional Internet finance to technology-driven FinTech, highlighting their evolving strategic focus.

Table 3. Transformation of Major Chinese FinTech Enterprises

Original Name	Current Name	Strategic Focus
360 Finance	360 DigiTech	Consumer credit, risk modeling, digital lending
Ant Financial	Ant Group	Digital payments, blockchain, financial infrastructure
JD Finance	JD Digits	Supply chain finance, AI-driven credit solutions
Baidu Finance	Du Xiaoman	Digital wealth management, smart investment
Xiaomi Finance	Xiaomi Digital Tech	Consumer lending, smart device integration

(3)Structural Evolution and Market Trends in China's FinTech Industry

China's FinTech sector has undergone deep structural transformation in recent years. Although the number of unicorns fell to about one-third of the 2019 level, the market continued to expand—signaling consolidation and maturity rather than decline. Leading firms strengthened technological capacity, broadened service ecosystems, and drove innovation through capital integration. Payment technology and personal wealth management remain the core subfields: companies like Affirm and Stripe pioneered "payment-as-a-service," while Chinese firms expanded nationwide mobile payment infrastructure, attracting over USD 2.5 billion in financing in Q2 2020. Meanwhile, InsurTech has become a major growth engine. By leveraging big data, AI, and smart underwriting, firms such as Ping An and China Life have embedded "Insurance + Technology" strategies, cutting costs, enhancing efficiency, and reinforcing the industry's resilience and institutional maturity.

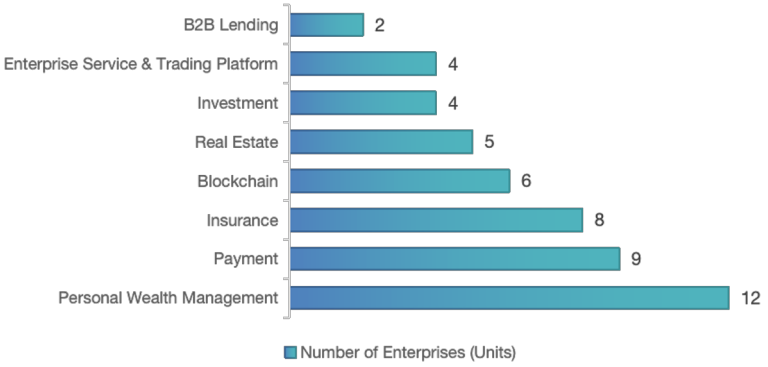

Fig. 3. Financial Technology Enterprises

Figure 3 illustrates the distribution of Chinese FinTech enterprises across subfields. Personal wealth management firms accounted for the largest share, followed by payment technology, insurance technology, and blockchain finance. In contrast, B2B lending platforms remain few, as their business models face sustainability challenges due to limited user bases and high operational risks. The government's 2019 decision to close most P2P and B2B lending platforms further underscored the need for stricter supervision and stable, technology-driven financial innovation. Overall, this structural evolution highlights how FinTech is moving from scale expansion to quality growth—becoming a cornerstone for improving financial inclusion and easing financing constraints for small and micro enterprises.

3 The Impact of FinTech on SME Financing

The rapid evolution of FinTech has become a vital driver in easing financing constraints for small and SMEs. By integrating blockchain, big data, and artificial intelligence (AI), FinTech transforms capital allocation [9] , risk assessment, and credit delivery, thereby improving financial inclusiveness and efficiency. Yet, research on the mechanisms linking FinTech to SME financing remains limited.

3.1 Blockchain and Supply Chain Finance

Blockchain technology transforms financial information management through decentralization, transparency, and immutability, thereby reducing information asymmetry between SMEs and financial institutions [10]. By creating tamper-proof digital ledgers that record end-to-end business activities, blockchain enables accurate credit assessment even without traditional collateral. In supply chain finance, it provides all participants with verified, real-time data, shortening loan approval cycles, improving risk pricing, and lowering financing costs. Smart contracts further enhance enforcement and mitigate moral hazard. Overall, blockchain strengthens financial trust, operational efficiency, and the sustainable development of SMEs within digital ecosystems.

3.2 Big Data and Intelligent Credit Assessment

Big data analytics has transformed traditional finance by shifting from collateral-based to information-based lending. By integrating data from transactions, taxes, e-commerce, logistics, and social credit, financial institutions can construct comprehensive SME risk profiles, enabling accurate credit assessments without physical collateral. Dynamic credit scoring models further enhance flexibility by continuously updating risk parameters. Predictive analytics allows banks to identify high-potential SMEs and adjust lending strategies proactively. These innovations expand credit access, reduce systemic risk, and foster a sustainable digital credit ecosystem, where data integration, financial institutions, and regulation interact in a virtuous cycle of innovation and stability.

3.3 Artificial Intelligence and Financial Inclusion

AI strengthens FinTech's ability to process complex information and improve decision-making efficiency. Through machine learning algorithms, financial institutions can analyze non-linear relationships between borrower behavior and risk outcomes, allowing for automated credit scoring and fraud detection. AI-powered customer service systems—such as intelligent chatbots and virtual financial advisors—also lower operational costs and expand service accessibility for SMEs in remote regions. By combining AI with big data, FinTech companies can tailor financing products to individual enterprise needs, achieving personalized risk-based pricing and enhancing financial inclusion. Ultimately, the use of AI-driven decision support systems accelerates credit approval, reduces manual bias, and contributes to a more inclusive and efficient financial environment for SMEs.

4 Policy Recommendations and Strategic Directions

4.1 Strengthening Policy Support and Macroeconomic Coordination

The rise of FinTech has become a pivotal force in easing financing constraints for SMEs [11]. Through the integration of blockchain, big data, and AI, FinTech optimizes capital

allocation, risk assessment, and credit access, improving financial inclusiveness and efficiency. Yet, the mechanisms linking FinTech to SME financing remain underexplored. This section examines how these core technologies enhance transparency, accessibility, and sustainability in SME finance.

4.2 Building a Comprehensive SME Credit System

A robust credit infrastructure is the foundation of inclusive finance. The government should accelerate the establishment of a unified digital credit database that integrates financial, tax, and commercial data of SMEs. By leveraging blockchain and cloud computing, this platform can enable real-time data exchange among banks, regulators, and third-party service providers. Such a system would not only expand SMEs' credit visibility but also strengthen risk monitoring and compliance, ensuring that credit decisions are based on objective and verifiable data. This mechanism will further bridge the gap between SMEs and financial institutions, mitigating the long-standing issue of information asymmetry.

4.3 Enhancing Regulation of Online Lending and Financial Platforms

In recent years, the rapid proliferation of online lending platforms—such as peer-to-peer (P2P) systems—has created both opportunities and risks [12]. Although these platforms initially improved credit access for individuals and SMEs, the absence of effective regulation led to widespread misuse and fraud. The government's decision to shut down most P2P platforms was therefore necessary to maintain financial stability. Moving forward, policymakers should establish clear legal frameworks for digital finance, focusing on data security, consumer protection, and anti-money laundering compliance. By guiding FinTech enterprises toward standardized operation, regulators can foster a secure, transparent, and innovation-friendly financial ecosystem that supports SME growth.

5 Conclusion

In summary, FinTech has become a transformative force in resolving SMEs' financing constraints. Through blockchain-enabled transparency, big data–driven analytics, and AI-powered risk assessment, FinTech enhances the efficiency, inclusiveness, and resilience of China's financial system. However, technology alone cannot guarantee sustainable development; it must be accompanied by sound policies, institutional reforms, and responsible regulation. Only through the synergistic interaction of technological innovation, government support, and market mechanisms can FinTech fully unlock its potential to empower small and micro enterprises—thereby contributing to equitable economic growth and the modernization of China's financial infrastructure.

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