A Study on the Impact of Financial Technology on Innovation in Small and Medium-Sized Enterprises

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Abstract. In recent years, financial technology has become an important force in the financial sector, providing small and medium-sized enterprises (SMEs) with new financial tools and solutions. This paper starts from the concept of financial technology and the challenges faced by SME innovation, explores in depth how financial technology promotes SME innovation, analyzes its mechanisms and some challenges encountered in the process, and puts forward policy recommendations in terms of training, privacy and security, and policy stability, to promote the sustainable innovative development of SMEs in the era of financial technology.

Keywords: Financial technology, SME innovation, financing constraints, information asymmetry.

1. Introduction

Innovation is the primary driving force behind development. Against the backdrop of global industrial and technological paradigm shifts and the accelerating pace of emerging technology innovation and application, enterprises-especially small and medium-sized enterprises (SMEs)—face certain systemic challenges in innovation. Innovation is often characterized by high investment, high risk, and long cycles, and SMEs can only carry out innovative activities if they have sufficient funds [1]. However, due to issues such as an imperfect financial system and information asymmetry, SMEs face difficulties in obtaining financing and high financing costs. With the development of digital technologies, emerging technologies such as cloud computing, blockchain, artificial intelligence, and big data are being integrated into financial services, providing new opportunities and solutions for SMEs [2].

Financial technology (Fintech), as an innovation that integrates information technology, communication technology, and financial operations, is transforming the traditional financial model and bringing new mechanisms and momentum for SME innovation. However, the development of fintech also faces certain challenges, such as data privacy and security risks, and regulatory issues. Therefore, governments and regulatory bodies need to develop relevant policies to protect the rights and interests of SMEs while promoting the innovative development of fintech. This paper will conduct an in-depth study of the characteristics of fintech, analyze its impact on SME innovation, and provide some recommendations to promote the sustainable innovative development of SMEs in the era of fintech.

2. The Concept of Fintech

Fintech is a revolutionary field that combines modern technology with financial services, aiming to create, apply, and integrate innovative technologies to improve and enhance financial services, products, and business models. Its core mission is to provide businesses with more efficient, convenient, secure, accessible, and cost-effective financial solutions through digitalization, automation, and information technology, as well as leveraging cutting-edge technologies such as big data analytics, artificial intelligence, blockchain, cloud computing, and mobile communications. Within the scope of fintech, there are various innovative tools and applications, including digital payments, e-wallets, mobile banking, smart contracts, and lending platforms. These technologies and services not only improve the availability of financial products and services but also promote financial

inclusion, enabling more people to access financial services, especially those marginalized in traditional financial systems [3].

3. Challenges Faced by SMEs in Innovation

Funds are the essential material foundation for supporting SMEs in carrying out financial innovation activities. The funding of an enterprise mainly comes from two sources: one is internal funds, primarily obtained from daily business operations; the other is external financing. Innovation is a high-investment, high-risk, and long-cycle activity. For SMEs, self-generated funds are often insufficient to support sustained innovation until the break-even point is reached, making external financing particularly important. Currently, China has relatively high requirements for direct financing, which ordinary SMEs find difficult to meet. Due to reasons such as information asymmetry, SMEs also find it challenging to obtain indirect financing support from financial institutions represented by banks. Therefore, difficulties in financing and high financing costs are common challenges faced by SMEs.

Firstly, due to the relatively small scale of SMEs and their weaker assets and financial conditions, it is difficult for them to meet banks' financing thresholds. Banks generally require borrowing enterprises to have a certain scale and financial standing, such as annual turnover, net profit, and asset size, which is hard for startups and newly established SMEs to meet. In addition, banks require the enterprise to provide collateral or guarantees, which is also a challenge for SMEs. Many SMEs do not have sufficient assets or guarantees and therefore cannot meet banks' requirements, making it difficult to obtain financing.

Secondly, due to the relatively low transparency of SMEs' financial statements, banks often find it difficult to accurately assess their credit risk, resulting in higher lending risk for SMEs. Therefore, banks tend to adopt a more cautious attitude. Moreover, due to information asymmetry, banks have higher information requirements for SMEs and usually demand a large amount of information, increasing both the cost and difficulty of financing for SMEs.

Thirdly, banks' reluctance to lend to small businesses is another factor contributing to financing constraints. Because small businesses are of smaller scale and carry higher operational risks, banks generally adopt a more cautious lending strategy toward them. Banks often impose stricter loan approval requirements, higher risk pricing, and sometimes outright refusal to lend to small businesses. This cautious lending behavior by banks leads to financing difficulties for SMEs and limits their development space [4, 5].

4. How Fintech Drives Innovation in SMEs

4.1. Lowering Barriers to Financial Services and Expanding Financing Channels

Firstly, fintech breaks the geographical and infrastructural barriers present in traditional finance. In traditional finance, the location of SMEs often affects their access to funding, especially for those located in remote areas or second-tier cities. However, the development of fintech has transformed the Internet into a financing platform, no longer constrained by geographical location. SMEs can easily reach global investors and financial services through online platforms, providing a broader space for their innovation activities.

Secondly, fintech introduces diversified financing models, including crowdfunding and digital supply chain finance. Crowdfunding allows SMEs to raise funds from a large number of small investors, providing financial support for the business while also offering the community and supporters the chance to participate and invest. Digital supply chain finance, on the other hand, makes funding within SMEs' supply chains more transparent and efficient through digital processes. These new financing models offer SMEs more choices, helping them better manage funds and drive innovation projects [6].

Finally, fintech offers SMEs greater flexibility and convenience for innovation. SMEs can choose different financing methods according to their needs, such as loans, equity financing, or supply chain financing. This personalized approach to financing helps businesses better meet their funding needs and facilitates the development of innovative projects.

4.2. Alleviating Information Asymmetry to Reduce Financing Costs

Firstly, fintech lowers the financing risk cost of SMEs by alleviating information asymmetry. In the traditional financial system, due to information asymmetry, banks usually adopt a more conservative approach to the credit risk of SMEs, requiring higher risk premiums, which results in higher financing costs for SMEs. However, fintech, leveraging emerging technologies such as big data, can monitor the operational activities of enterprises in real time and quantify risks, breaking down the information barriers between banks and enterprises. This allows banks to better understand the operational status and credit risk of SMEs, reducing uncertainty and enabling them to offer lower interest rate loans to SMEs, effectively lowering their financing costs.

Secondly, fintech reduces the transaction costs of financing for SMEs. Traditional financial services typically require substantial human resources and branch networks, which increase transaction costs. In contrast, fintech promotes the development of internet finance and provides more efficient channels for traditional financial institutions through technology spillover effects. SMEs no longer need to visit bank branches frequently and can obtain financing through online channels, thereby reducing transaction costs. Fintech also offers SMEs more convenient financing application and approval processes, accelerating the flow of funds, improving efficiency, and minimizing unnecessary time and cost wastage.

Thus, by alleviating information asymmetry and reducing transaction costs, fintech effectively lowers financing costs for SMEs, helping them access funding more easily, unleash their innovation potential, and drive their innovative activities [7].

4.3. Facilitates Precise Government Subsidies

Government departments have more comprehensive data and lower costs in resource allocation and can use fintech tools for precise evaluation. The government can establish a credit system and utilize technologies such as big data, cloud computing, and blockchain to mine and analyze the operational data of SMEs, assess their characteristics and needs, and determine subsidy recipients. This not only helps the government allocate subsidy funds more effectively but also sends policy signals to financial institutions in a market economy, helping SMEs with better development prospects obtain more investment funds. This precise evaluation and subsidy mechanism improves the efficiency of government fund utilization and better promotes the development and technological innovation of SMEs.

5. Challenges of Fintech in Driving Innovation for SMEs

5.1. Technology Gap

One of the primary challenges fintech faces in lowering the barriers to financial services and expanding financing channels to promote innovation among SMEs is the technology gap. While fintech offers innovative opportunities for SMEs, companies with insufficient technical capabilities may not be able to fully utilize these tools. Emerging technologies such as big data analytics, blockchain, and artificial intelligence are crucial for digital financial services, but SMEs may lack the resources or technical expertise to effectively leverage these technologies. This leads to digital inequality, where some businesses may be excluded from the wave of digital innovation, hindering their ability to innovate and enhance competitiveness.

5.2. Data Privacy and Security

Data privacy and security issues are significant challenges fintech faces in supporting SME innovation. With the rapid development of fintech, the collection and processing of large amounts of sensitive information have become increasingly common. SMEs need to implement effective data security measures to ensure that sensitive information is not leaked or misused. Additionally, fintech companies bear a substantial responsibility for maintaining the privacy and security of user data. Data breaches and cyberattacks remain serious concerns, which can cause significant damage to businesses and users, and even threaten the stability of the financial system.

5.3. Policy and Regulatory Uncertainty

Policy and regulatory uncertainty is another challenge fintech encounters when supporting SME innovation. The policy and regulatory environment in the fintech sector often changes, and government policies may impact SME innovation and financing. Governments need to balance fintech innovation with risk management to ensure the healthy development of the market. An unstable policy environment may make it difficult for SMEs to anticipate future regulatory requirements, thereby affecting their financing plans and innovation activities.

6. Policy Recommendations

6.1. Promote the Popularization and Training of Digital Technology

Firstly, the government can provide funding support to promote the implementation of digital training programs, ensuring that SMEs understand and master the use of fintech tools to enhance their digital capabilities. In addition, the government can encourage fintech companies to collaborate with SMEs to provide customized digital solutions that meet the needs of different businesses. Secondly, the government can establish digital technology consulting centers to offer free digital consultation and guidance to SMEs. These centers can help businesses assess their digitalization needs, develop digital strategies, select suitable fintech tools, and provide training and support.

6.2. Strengthen Data Privacy and Security Supervision

Firstly, the government should strengthen the regulation of fintech companies to ensure they handle and protect user data in compliance with regulations. The government can formulate strict data privacy laws requiring fintech companies to implement necessary security measures to safeguard user data privacy and security. The government can also set up data regulatory agencies responsible for supervising the data handling practices of fintech companies and penalizing violations. Secondly, the government can promote self-regulation within the fintech industry, establish industry standards and best practices, and reward companies that actively participate in self-regulation to improve the overall level of data security in the industry. Finally, the government can enhance international cooperation by sharing best practices in data privacy and security with other countries. By actively participating in international mechanisms for data security and privacy protection, it can jointly address cross-border data flow and security challenges.

6.3. Establish a Stable Policy Environment

Firstly, the government should establish a stable policy framework to provide SMEs with a predictable business environment. The government can work with the industry to develop long-term strategic plans to ensure policy continuity and stability, which will help SMEs plan for long-term development and investment decisions. Secondly, the government can strengthen communication and coordination with the fintech industry to stay updated on its development needs and challenges. By setting up policy advisory bodies, the government can regularly engage in dialogue with fintech companies and SMEs, collect feedback, and adjust policies and regulatory measures. Finally, the government can establish an innovation monitoring and evaluation system to track the innovation

activities and achievements of SMEs. Using data analysis and evaluation methods, the government can assess the effectiveness of policies and adjust them as needed to ensure they meet the needs of SMEs and align with innovation trends [8].

7. Summary

Based on the analysis of the challenges and difficulties faced by SMEs in innovation, this paper explores in depth how financial technology can promote innovation in SMEs. It argues that financial technology can reduce financing and innovation costs for enterprises by lowering the barriers to financial services, alleviating information asymmetry, and optimizing the allocation of government resources, thereby promoting R&D innovation in SMEs. The paper then analyzes some of the challenges encountered in this process in detail and provides policy recommendations in three areas: training, privacy and security, and policy stability, to facilitate the sustainable innovative development of SMEs in the era of financial technology.

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