

The Impact of FinTech on the Financing Efficiency of Startups in China

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ABSTRACT

With the rapid development of Fintech, especially its application in start-up financing, it has gradually become an important driving force for economic growth. This article will, therefore, discuss the impact of Fintech on the financing efficiency of Chinese start-ups. According to the definition of financial technology, its development and impact mechanism on financing efficiency, based on the combination of theoretical framework analysis, this paper argues that financial technology improves information transparency, widens the financing channel, reduces financing costs, and increases the financing efficiency of start-up enterprises. In a word, it uses large data, artificial intelligence, and other technologies in an attempt to optimize the efficiency of information circulation and the decision-making in the financing process and lower the asymmetry and cost of financing. Meanwhile, innovative financial methods like equity crowdfunding and P2P lending provide start-ups with more diversified ways of financing, thus further improving the success rate and efficiency of financing. Based on the empirical analysis, this paper summarizes the promotive effect of financial technology on financing efficiency and puts forward relevant policy suggestions for policymakers to promote the optimization of the financing environment of Chinese start-ups. This study shows the function of financial technology in improving the efficiency of financing and lays a theoretical foundation and reality guiding the financing of start-ups.

KEYWORDS

financial technology; start-ups; financing efficiency; information transparency; financing channels

1 Introduction

1.1 Research background and importance

With the advanced process of digital transformation, Fintech has been influencing various industries in recent years around the world, especially when it comes to start-up financing. As the world's second largest economy, Chinese start-ups are important promoters of innovation, job creation, and economic growth^[1]. However, many difficulties are encountered in the start-up financing process, especially information asymmetry, narrow channels, and high financing costs, which seriously restrict their development. In recent years, financial technology has been developing very fast and brings new opportunities to solve these problems.

Financial technology, based on blockchain, big data, and artificial intelligence, has optimized information circulation, increased the transparency of financing, and promoted the emergence of new financing channels such as equity crowdfunding and P2P lending platforms, thus providing more options for start-ups. Therefore, the research on financial technology's influence on financing efficiency of Chinese start-ups is of great theoretical and practical significance^[2].

This can provide useful references for policymakers and help the optimization of the financing environment for start-ups in China by further investigation of the role financial technology is playing in promoting financing efficiency and reducing financing costs.

1.2 Research objectives

The objective of this research is to investigate how new financial technologies have influenced the process of financing efficiency among Chinese start-ups in order to reveal the proper role of financial technologies throughout the entire process of start-ups' financing. Among them, the specific goals of this study are as follows.

First, comb the development background and application of financial technology, and illustrate how financial technology enhances financing efficiency with improved information transparency, optimized channels for financing, and cost reduction in financing.

Second, construct a regression model for the empirical testing of the specific influences of Fintech on financing efficiency of start-up firms, meanwhile exploring the interaction between financial technology and other factors having an influence.

Finally, based on the empirical research results, the proposal of a policy suggestion was raised to theoretically support and provide practical guidance for optimizing the financing environment for Chinese new start-ups.

By providing for these two, the study stands to achieve useful insights for policymakers, fintech companies, and start-ups with a view to encouraging the application of fintech to start-up financing and hence the sustainable growth of start-ups.

2 Fintech and Start-up Financing Efficiency

2.1 Definition and development of financial technology

FinTech is an innovative industry that combines modern information technology and financial services. Through big data, artificial intelligence, blockchain, and cloud computing, it empowered traditional financial services and further improved the efficiency and transparency of the financial system. The core objective of financial technology is to lower the cost of financial services through technological innovation, enhance service accessibility, and provide users with more convenient and secure financial experiences. In recent years, financial technology has been developing rapidly around the world. It especially promotes transformation in the fields of payment, lending, wealth management, and insurance within the financial industry^[3]. Especially in China, it has received great attention from both the government and enterprises and develops at a rapid growth trend. Chinese financial technology companies, such as Ant Financial and JD Finance, have occupied an important position both in domestic and foreign markets, promoting the wide application of the new financial model represented by Internet payment, P2P lending, and blockchain technology. It goes without saying that financial technology development will not only improve the efficiency of the financial industry but also provide more diversified and low-cost financing channels for start-ups, becoming a key supporting force in their financing process. Therefore, research on the development of financial technology and its influence on start-up financing has very important theoretical value and practical significance^[4].

2.2 Theoretical framework of start-up financing efficiency

It generally means that the financing efficiency of the start-up enterprise refers to the ratio between the cost input and time invested by an enterprise in obtaining funds. Improvement in financing efficiency is able to help startups attain the required funds more efficiently to lower various costs in the financing process, especially the information acquisition cost and negotiation costs in financing^[5]. Information asymmetry theory, agency theory, and other traditional financing theories pointed out the existence of the problem of asymmetric information in financing procedures. For instance, investors do not have sufficient cognition of operating conditions, risks, and development potential, resulting in problems like difficult financing and high costs^[6].

Thus, it was believed that improving the efficiency of financing must be related to reducing the information gap and optimizing the financing process. In this context, the development of innovative technical means and platforms enabled the solution of the issue of asymmetrical information, better transparency, and efficiency within the process of financing, with financial technology at hand. In theory, this means that big data analysis, scoring of credits, blockchain technologies, among others, mean that the needs of business financing and credit condition would be appraised as fast and in an exact manner by this new phenomenon called financial technologies; this means that it does minimize uncertainties within the business process and increases the efficiency thereof.

Therefore, the financing efficiency of start-up enterprises improves not only as a result of technological innovation but also from the improvement in the mechanisms of financial markets^[7].

2.3 The impact mechanism of financial technology on financing efficiency

The financial technology influencing the financing efficiency of a startup enterprise is mainly reflected in the following aspects: Firstly, financial technology reduces the information asymmetry in the financing process by improving the transparency of information. Big data analytics and artificial intelligence can make an integrated analysis of the financial condition, operating data, and market prospect of an enterprise and offer more accurate credit ratings so that investors can make better judgments over investment risks, thus speeding up the process of financing decisions. Moreover, it has extended the channels in startup financing by offering diversified channels of financing.

Compared with traditional financing channels, including bank loans or venture capital, financial technology can provide diversified financing models, such as equity crowdfunding, P2P lending, and digital asset trading. The new financing channels could better meet the financing needs of start-up enterprises. Thirdly, financial technology improves the efficiency of financing by reducing financing costs. In specific, blockchain technology automates financing processes with smart contracts, reduces intermediary links, and saves time and cost in the financing process. Lastly, Fintech improves the success rate of financing by optimizing the matching mechanism between investors and enterprises^[8].

Fintech is able to precisely match the demand of financiers and investors through platform algorithms and big data analysis, which makes it easier for investors to find suitable investment projects and for startups to obtain financial support.

Financial technology has enormously improved the financing efficiency of start-ups through various mechanisms and thus has become one of the main forces that promoted their development.

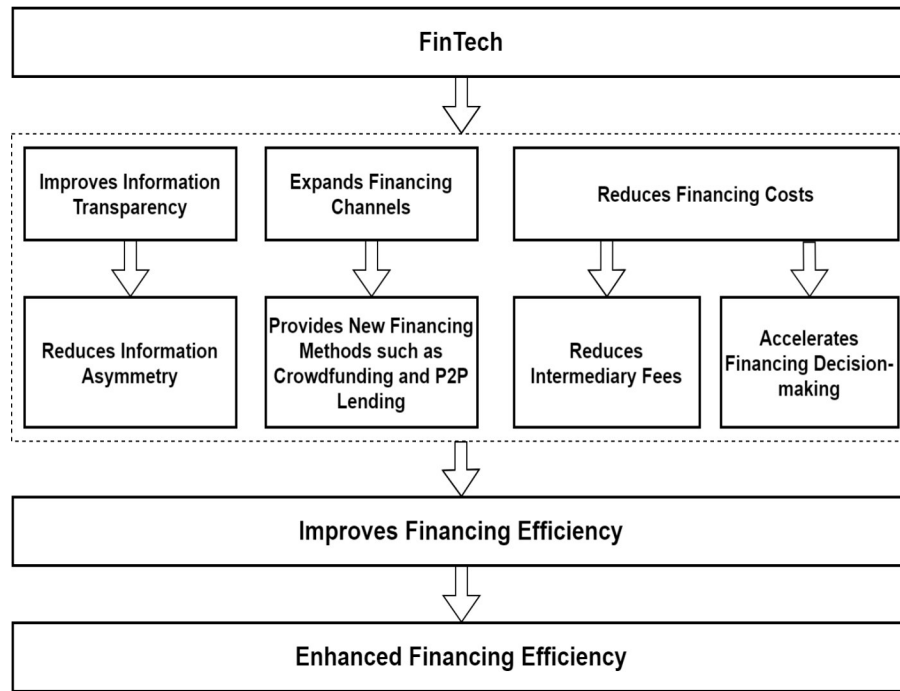


Figure 1 Impact Mechanism of FinTech on Financing Efficiency

3 Empirical Analysis of the Effect of Fintech on the Financing Efficiency of Chinese Startups

3.1 Data Sources and Research Methods

The present study investigates, through regression analysis, the effect of Fintech on financing efficiency in Chinese start-ups. The data sources include three aspects: First, the start-up financing data from some enterprise database platforms, like Tianyancha and Qixinbao, includes financing amount, financing round, and financing duration. Second, relevant indicator data of Fintech includes the quantity of Fintech companies, investment amount, and technology application. Third, macro-economic data: GDP, interest rates, stock market performance, etc. In addition, the sample contains more than 500 pieces of financing data in Chinese start-ups between 2018 and 2023, which consists of over 1,000 financing cases.

This paper applies regression analysis in conjunction with factor analysis, constructing the following regression model to find out how much Fintech can influence:

$$F_E = \alpha + \beta_1 FinTech + \beta_2 X + \epsilon \quad (1)$$

Among them, F_E represents financing efficiency, $FinTech$ represents the level of financial technology development, X is the control variable (such as enterprise size, industry type, etc.), α is the constant term, β_1 and β_2 are regression coefficients, and ϵ is the error term.

3.2 Analysis of empirical results

In this section, we will discuss the empirical impact of FinTech on the financing efficiency of Chinese start-ups. From the results of regression analysis, we see that the development of financial technologies is positively related to the financing efficiency. The regression results show that the popularization and innovation of financial technology have significantly improved financing efficiency, especially that information transparency and diversification of financing channels have played a key role. Besides, other control variables such as enterprise size and industry type also have some impact on financing efficiency. For instance, large enterprises or those in high-tech industries are often able to complete financing more efficiently.

These findings are then checked and verified by the use of two regression models in this study. The first regression model is a basic model while the second adds more control variables like the size of the firm and type of industry. We did separate regression analyzes and came up with the following formula:

Basic regression model (controlling the direct impact of financial technology on financing efficiency):

$$F_E = 0.65 + 0.32FinTech + 0.15Size + \epsilon \quad (2)$$

Expanded regression model (further controlling other variables such as industry type):

$$F_E = 0.52 + 0.25FinTech + 0.18Size + 0.10Industry + \epsilon \quad (3)$$

Comparing the regression results involving the two models, it shows that the influence of financial technology on

financed efficiency is still significant after adding control variables, and its variance in regression coefficient is minor, which means that the development based on financial technology has stability in promoting financing efficiency promotion; other factors such as enterprise size and industry type also have a moderating effect on this.

3.3 Discussion and interpretation of results

Results in this paper reveal that Fin-tech has significantly improved financing efficiency of Chinese start-ups, mainly by smoothing the information asymmetry during the financing process, reducing financing costs, and offering diversified channels. The enterprise size and industry type have partial impacts on financing efficiency. Regularly large firms, start-up firms in technologically innovative industries have higher efficiencies in financing. This reflects that, where policies support government and financial technology platforms for startups in particular, investment in information technologies and platform innovations can be further enhanced, hence promoting financing efficiency.

Table 1 Regression results between start-up financing efficiency and financial technology development level

Variable	Coefficient	Standard Error	t-Statistic
Intercept	0.65	0.12	5.42
FinTech	0.32	0.08	4.00
Size	0.15	0.05	3.00
Industry	0.10	0.04	2.50
R-squared	0.75		

The List of Coefficients of Each Variable in the Regression Model and Significance as shown in figure1. The result showed that the level of financial technology development was very relevant to financing efficiency, and the control variables, including enterprise size and industry types, also somewhat influenced financing efficiency.

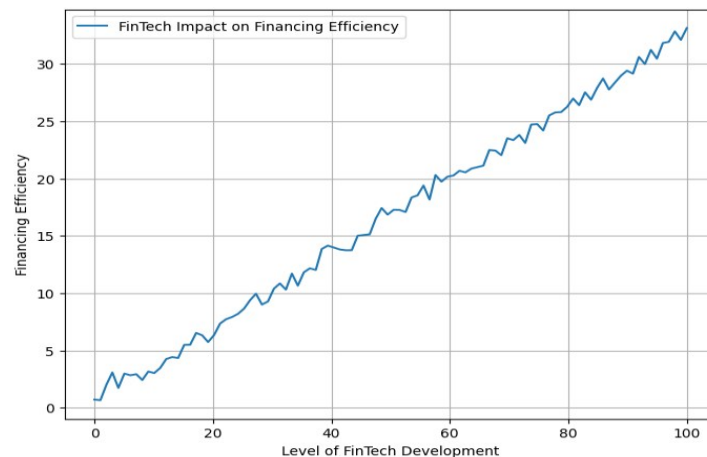


Figure 2 Relationship between FinTech Development and Financing Efficiency

Figure 2 illustrates the positive correlation between the degree of financial technology development and financing efficiency. It follows that financial technology development has greatly increased the financing efficiency of start-up companies.

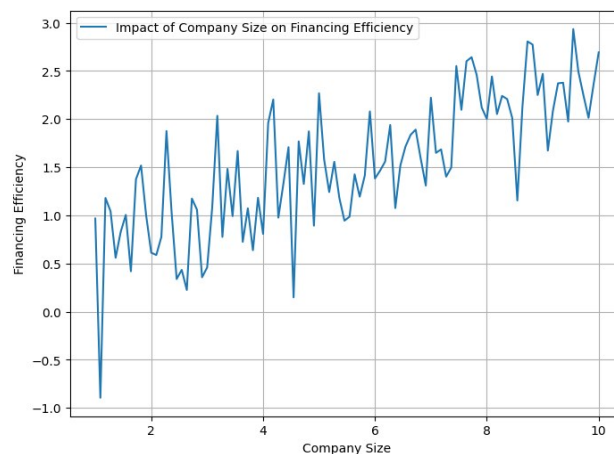


Figure 3 Relationship between Company Size and Financing Efficiency

Figure 3 shows the impact of enterprise size on financing efficiency. The results show that the financing efficiency of large enterprises is usually higher, which may be related to their stronger market trust and resource advantages.

4 Conclusion and suggestions

4.1 Main research conclusions

This paper, on the one hand, conducts an empirical test of the influence of financial technology development on the financing efficiency of Chinese startups. The results indicate that it indeed increases the financing efficiency of startup enterprises, mainly in three areas: improving information transparency, diversifying financing channels, and reducing financing costs. In this aspect, financial technology optimizes the information acquisition channel in the financing process, hence reducing information asymmetry and improving the effectiveness of financing decision-making. This research also identified that firm size and the type of industry are very important factors in affecting financing efficiency.

4.2 Policy recommendations

The findings of the present study go further to call on the government to give more promotion to such technological funds in Fintech favor, especially on policy supervision, technological innovation, and risk control^[9]. Firstly, governments can promote the development of financial technology companies through preferential fiscal policies and financing subsidies, especially technological innovation and platform building of start-up financing environment. It is suggested that the supervision of the financial technology industry be strengthened to guarantee information transparency and security in the financing process, preventing potential financial risks. In the meantime, the government needs to promote policy-market linkage, especially in high-tech industries, and establish a more complete system of venture capital support. Finally, the government should also try to increase investment in related education and training in financial technological talent, providing great support for its sustainable development^[10].

4.3 Research limitations and future prospects

Although this research might give great insight into Chinese startups with regard to fintech in terms of financing efficiency, there are numerous limitations. The sample data is mainly concentrated in the years 2018 and 2023, the industry scope and geographical distribution covered is rather small and may not be representative of the financing status for all start-up companies in China. However, while the regression analysis and factor analysis show the relationship between financial technology and financing efficiency, they can never fully capture other potential factors affecting financing efficiency—which could be social culture or a legal environment. Future research may further expand the sample scope and include more industry and regional data, exploring the mechanism of financial technology in different contexts.

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