

Research on the Mechanism and Path of Science and Technology Finance to Support the High-quality Development of Private Enterprises

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Abstract: With the rapid progress of science and technology in China and the transformation and upgrading of the national economy, science and technology finance is gradually showing its role in helping the high-quality development of private enterprises. This paper takes science and technology finance as the supporting force and private enterprises as the research object, and explores the effective support for the high-quality development of private enterprises from three aspects: mechanism, path and policy, and then proposes a high-quality development model of private enterprises. By using random forest algorithm to test the effect, the feasibility and scientificity of the development model are qualitatively and quantitatively analyzed. The research shows that through the effective support of science and technology finance, the high-quality development model of private enterprises has great development potential, so that private enterprises can better cope with market challenges and enhance their competitiveness.

Keywords: Science and technology, Finance, Private enterprises, High-quality development.

1. Introduction

As an important part of China's economy, private enterprises bear the important responsibility of promoting employment, promoting economic growth and promoting social stability. As a combination of technology and finance, science and technology finance provides a new development path and opportunities for private enterprises. Through the application of advanced technologies such as artificial intelligence and big data analysis, science and technology finance can help private enterprises reduce financing costs, improve financing efficiency, promote scientific and technological innovation and enhance competitiveness. At the same time, fintech can also provide more diversified financing channels and services for private enterprises, helping them better cope with market challenges and risks.

Therefore, in-depth research on how science and technology finance can support private enterprises to achieve high-quality development and explore its mechanisms and ways will not only help provide more development opportunities for private enterprises, but also provide strong support for the sustainable growth of China's economy. By strengthening the in-depth cooperation between science and technology finance and private enterprises, we will jointly promote the high-quality development of private enterprises and realize the optimization and transformation and upgrading of the economic structure.

2. Literature Review

2.1. Research on the Development of Science and Technology Finance

Zhao Changwen (2009) pointed out that to increase the power of science and technology finance, it is necessary to promote its reform from the root that is, to accelerate financial investment in science and technology, and encourage financial institutions, entrepreneurs, and the public to

participate in it. Therefore, he proposed that measures should be taken to develop more financial products, improve the service experience, and establish a more complete information exchange platform, so that the scientific and technological innovation chain can be better linked and better meet the changing social and economic needs. According to Fang Hanting (2010), fintech can be summarized in four simple aspects: first, it is an innovative activity that mobilizes resources by applying science and technology to the business field; Second, it will form a model that closely links science and technology with the economy, and this model will be beneficial to both parties; Moreover, it may lead to more investment of financial capital, which may bring more returns; In the end, it may lead to a tremendous increase in people's productivity. Zhou Changfa (2011) proposed that through the establishment of a sound science and technology financial system, the gap in the market mechanism can be filled, the high degree of synergy of resource elements can be promoted, scientific research and innovation can be stimulated, and social development can be promoted, so as to achieve the important goals in four aspects.

2.2. Research on the Relationship between Science and Technology Finance and Innovative Technology

The interaction between fintech and innovative technologies is multidimensional and far-reaching. Hicks (2010) argues that efficient financial markets promote technological innovation, and that investment, not technology, is the fundamental prerequisite for an industrial revolution. Efficient financial markets often bring dynamism to technological innovation, which in turn drives technological development and ultimately applies to financial markets. Chen Jieying (2020) started from the data of the Greater Bay Area and believed that the innovation of technology and finance is inseparable from the ecological coordination of industrial development. Wang Weibin et al. (2012) found that

scientific and technological innovation is a derivative of the development of science and technology finance, so it can be used as an intermediary bridge for science and technology finance to promote the development of high-tech industries. And the mode of high-tech industrialization development will change due to the different ways of resource allocation, that is to say, if a region gathers more scientific and technological financial resources, then its high-tech emerging industries will develop more vigorously, and it will also have a good role in promoting the economic level of the entire region.

2.3. Research on the Promotion of Private Economic Development by Science and Technology Finance

With the deepening of modern digital transformation, the development of innovative market economy, and the development of private enterprises, it is necessary to fundamentally improve their financing difficulties. Therefore, the use of science and technology financial means to reduce the financial burden of private enterprises is an effective way that is generally recognized by the current society. Cui Yin (2024) believes that technology finance can provide necessary financial support for private enterprises. Wang Xuejun (2019) pointed out that the application of financial technology, such as big data, to achieve digital transformation can effectively alleviate the financing difficulties of small and micro enterprises. Fan Xiaoyun (2015) proposed that science and technology finance has the function of accelerator, and science and technology finance promotes the development of innovation ability by providing financial resource support for innovative enterprises and new quality productivity industries. Studies have shown that the use of advanced scientific and technological means, such as technological revolution and financial reform, can effectively support private enterprises, so that they can obtain less investment, less expenses, and have rich investment channels, thereby greatly reducing their financial pressure and promoting them to achieve a high level of economic growth.

3. Relevant Theoretical Basis

3.1. Economic Principles for the Development of Private Enterprises

The core of the growth of private enterprises lies in the effective operation of the market mechanism. As part of the market, private enterprises can flexibly adjust the scale of production and product structure, so as to achieve the optimal allocation and efficient use of resources.

In the market competition, private enterprises can achieve efficient allocation of resources through independent operation and self-financing. Private enterprises can better grasp market opportunities, and compared with other state-owned enterprises, they show stronger innovation momentum and more innovative thinking.

3.2. Theoretical Basis of Science and Technology Finance

3.2.1. Theoretical Definition of Science and Technology Finance

Schumpeter's Theory of Economic Development emphasized the central role of innovation in economic development. His innovation theory focuses on the introduction of the "five new" (new products, new methods,

new markets, new sources of supply, and new organizational forms), and explains the close relationship between financial capital and innovation. From Schumpeter's point of view, credit and capital are enormous drivers of economic innovation. For start-ups, credit support is key to their development. The development of fintech is based on this theory.

Compared with traditional financial management, science and technology finance is more prominent in terms of innovative development and guiding characteristics. Moreover, science and technology finance will continue to innovate with the development of scientific and technological innovation in terms of service methods, and its ability to adapt to the financing needs of science and technology enterprises at different stages will be better than that of traditional finance. The orientation of sustainable development is one of the important characteristics of fintech.

3.2.2. Financial Development Theory

This theory emphasizes the importance of the financial system to achieve the allocation of financial resources in an uncertain environment. This allocation has the attributes of spanning time and space, which helps to optimize the use of financial resources and promote economic development. In the field of science and technology finance, the theory of financial development provides broader financing channels and more efficient financial services for science and technology enterprises, which is conducive to promoting scientific and technological innovation and industrial upgrading.

3.2.3. Theoretical and Technical Support Brought By Interdisciplinarity

Fintech requires a certain degree of interdisciplinarity, such as computer science, statistics and finance. These disciplines have given financial support to science and technology on the basis of technical support and theory. To provide the necessary technical support for science and technology finance, computer science involves the design, development and management of computer systems, as well as the design and management of databases. Statistics is closely related to data analysis and modeling, as well as the use of statistical analysis that is useful for fintech applications in risk management and decision support. As an important core theoretical foundation of financial technology, finance provides a wealth of core theoretical guidance and practical applications for technology finance.

3.3. The Relationship between Science and Technology Finance and the Development of Private Small, Medium and Micro Enterprises

3.3.1. The role of Science and Technology Finance in the Development of Private Enterprises

The role of science and technology finance in the development of private enterprises is becoming increasingly prominent, providing diversified financing channels for private enterprises and promoting the upgrading and innovation of their industries and technologies.

Fintech provides a wealth of financing options for private enterprises. Traditional financing channels often have many restrictions for private enterprises, such as cumbersome approval processes and limited financing amounts. Through the use of modern information technologies such as the

Internet and big data, science and technology finance has innovated financing methods and service models, so that private enterprises can obtain funds more conveniently.

3.3.2. The impact of Private Enterprises on Science and Technology Finance

The positive impact of technology finance in the development of private enterprises is very significant.

(1) The rapid development of private enterprises provides the market with a broad vision of technology and financial demand. With the increasing number and scale of private enterprises, these enterprises have an increasing demand for financial services, such as financing, investment, risk management, etc. This market demand promotes the innovation and development of science and technology finance, so that science and technology financial institutions continue to introduce more products and services that meet the needs of private enterprises, so as to meet the diversified needs of the market. At the same time, it will bring rounds of innovation and development to science and technology finance.

(2) In the process of development, the influence of private enterprises on risk management has a positive effect on science and technology finance. Private enterprises need to establish a sound risk management system to improve their financing ability and market competitiveness. In the cooperation between science and technology financial institutions and private enterprises, they can jointly build a risk management system and credit system, reduce financial risks, and improve the stability of the financial market. This kind of cooperation has a positive effect on the healthy development of private enterprises, and also has a certain role in promoting the steady operation of science and technology finance.

(3) At the same time of the international development of private enterprises, the science and technology financial belt has also gained a broader space for development. With the acceleration of globalization, more and more private enterprises have begun to enter the international market, and technology financial institutions can promote the globalization of the financial market by providing cross-border financial services for these enterprises, so that the influence and competitiveness of science and technology finance can be further enhanced.

3.4. Case Study of the Benefits Brought By Science and Technology Finance

Ant Financial's fintech model is a comprehensive financial ecosystem that integrates multiple financial business areas such as payment, financing, investment, and insurance with technology at its core:

Payment: As one of the core products of Ant Gold, Alipay meets users' needs for fast, safe and convenient payment through online and offline payment services. Alipay not only provides basic functions such as QR code payment and transfer, but also continuously expands payment scenarios through technological innovation, such as non-inductive payment, face payment, etc.

Financing: Ant Financial uses big data and cloud computing technology to provide accurate financing services for small and micro enterprises and individuals. By analysing data on users' behaviour on the Alipay platform, Ant Financial is able to assess the credit profile of its customers and provide

more accurate lending services. This model makes it easier for small and micro enterprises to obtain financing.

Investment: In addition to money market fund products, Ant Financial also provides users with a full range of diversified wealth management services. Users can deposit their idle funds in various wealth management products provided by Ant Financial for rapid growth. In addition, for users with different investment preferences and risk tolerances, Ant Financial has also launched a variety of wealth management products for them to choose from.

Insurance: As one of the representatives of Internet finance companies, Ant Financial has entered the insurance industry to provide convenient insurance purchase services. Users can easily purchase various insurance products such as travel insurance and health insurance through the Alipay platform. The company combines its own advantages in technology and data to contribute to improving the operational efficiency and user experience of the insurance industry. At the same time, it is also a combination of Internet finance and traditional insurance industry.

Credit assessment services: In addition to existing credit assessment services such as Sesame Credit Score, Ant Financial also conducts a more comprehensive assessment of users' credit status by analyzing big data such as users' borrowing and spending behavior on Alipay, providing all-round coverage of personalized financial services.

Ant Financial's technology finance model is a comprehensive technology-driven financial system that combines fintech with traditional financial services, covering many areas such as payment, financing, investment, insurance, etc. The integration of the advantages of finance and science and technology has brought more convenient financial services to the people, and at the same time, the efficiency and security of finance have been greatly improved, thus playing a pivotal role in promoting the inclusiveness of financial services.

4. Models and Methods

4.1. Sample Selection and Data Sources

According to the notice on determining the second batch of pilot projects to promote the combination of science and technology and finance, the cities involved in the notice will be taken as the cities for the implementation of science and technology finance policies, including Zhengzhou City in Henan Province, Xiamen City in Fujian Province, Yinchuan City in Ningxia Province, Baotou City in Inner Mongolia Province, Shenyang City in Liaoning Province, and other seven cities that have not implemented science and technology finance policies, including Nanjing City in Jiangsu Province, Hangzhou City in Zhejiang Province, Xi'an City, Shaanxi Province, etc. The characteristic data of the city is collected through the China City Statistical Yearbook, and the characteristic data of specialized and special new enterprises are retrieved through the Guotaian database, and then screened and matched according to the set time.

4.2. Model Settings

In 2016, China launched the second batch of science and technology finance pilot cities, a total of 9 cities, in order to meet the control group and the experimental group, after screening and matching, we used 16, including 9 science and technology finance pilot cities and 7 non-science and

technology finance pilot cities. At the same time, we match the characteristic data of private enterprises with the characteristic data of cities, and analyze the path of science and technology finance to the development of private enterprises. The specific model settings are as follows:

$$dcity_{ij} = \alpha_0 + \beta_1 * E_{it} + \beta_2 * C_{jt} + \eta_t + \mu_i + \varepsilon_{it}$$

Where, i represents the enterprise, j represents the city, and t represents the time. $dcity_{ij}$ is a dummy variable for the implementation of urban policies, which represents the explanatory variable, which is a binary variable and is assigned according to whether the city is implemented by the science and technology financial policy; E_{it} represents the main variables selected at the enterprise level, and C_{jt} represents the representative variables selected at the city level. η_t denotes a fixed effect of time; μ_i represents the individual fixed effect of the firm, which can control the differences between the firms and ensure that the influence of individual characteristics on the research results is eliminated in the time dimension and before and after treatment. β_1 and β_2 are the coefficients of the interaction term, which measure the impact of science and technology finance on the high-quality development of private enterprises in terms of cities and enterprises, respectively, if $\beta > 0$, it means that science and technology finance promotes the high-quality development of private enterprises, if $\beta < 0$, it means that science and technology finance is not conducive to the high-quality development of private enterprises, and if $\beta = 0$, it means that the policy effect of science and technology finance is not obvious.

4.3. Variable Description

4.3.1. Explanatory Variables

We select the dummy variable of whether the city implements science and technology policy as the explanatory variable of the model, which is a binary variable, and the choice of the dummy variable as the explanatory variable is based on its binary variable, which makes the policy effect more intuitive. By comparing the differences between cities that implement science and technology finance policies and those that do not, we can understand more clearly the impact of science and technology finance policies on the high-quality development of private enterprises.

4.3.2. Explanatory Variables

Explanatory variables are mainly composed of two parts. Enterprise characteristics: (1) enterprise scale, total assets is the sum of all assets owned by the enterprise, a larger total asset scale means that the enterprise has a wide range of business in the market, so it is expressed by the logarithm of total assets; (2) Capital liquidity, current assets refer to assets owned by enterprises that can be converted into cash or cash equivalents in a relatively short period of time. Therefore, we use current assets to represent the liquidity of the company's assets; (3) Equity ratio, that is, total equity/total assets, this ratio can clarify the asset structure of the enterprise, and a higher equity ratio means that the enterprise has strong solvency and financial stability. Urban characteristics: (1) Industrial structure, which reflects the changing trend of

urban industrial structure through the ratio of the added value of the secondary industry (industry and manufacturing) to the added value of the tertiary industry (service industry); (2) the level of economic development, which uses the city's GDP as an intuitive indicator to measure the overall economic development of the city; (3) education level, which is measured by education expenditure/expenditure within the general budget of local finance; (4) The level of financial development can reflect the scale and activity of the credit business of financial institutions, and the balance of loans of financial institutions at the end of the year is selected as an effective indicator to evaluate the level of financial development.

5. Empirical Research

5.1. Empirical Research Based on Multiple Linear Regression

5.1.1. Descriptive Statistics

Table 1. Descriptive statistics of variables

Variable	Sample Size	Mean	S.D.	Mini	Max
dcity	414	0.3188	0.4666	0	1
TotalI	414	262723.6	405890	22980	4463393
ER	414	0.6962	0.2085	0.0590	2.8301
TAGR	414	0.2425	0.3942	-0.3366	3.2642
Mainincome	414	141355.5	351869.8	10132.55	4304281
ecolevel	414	7.9979	0.1988	7.2089	8.2695
edulevel	414	0.1510	0.0290	0.0015	0.1940
finlevel	414	8.3013	0.1836	7.3808	8.5548
indlevel	414	0.7740	0.2080	0.0050	1.2430

5.1.2. Correlation Analysis

The correlation analysis matrix shows that the correlation coefficient between the level of economic development and the level of financial development is above 0.74, so the model has a certain collinearity problem, which may be due to the fact that when the economic growth of a region is relatively fast, the demand for funds of enterprises and individuals will also increase. This will push financial institutions to issue more loans, leading to an increase in loan balances. In addition, there are also some collinearity problems between total assets and main business income, which may be due to the fact that enterprises in different industries may have different asset allocation and main business models.

Therefore, we modify the variables: since the level of financial development and total assets are not the main explanatory variables of the model, we remove the level of financial development and total assets, retain the level of economic development and the main business income, and replace the growth rate of total assets with the logarithm of the growth rate of total assets in the model, and re-analyze the correlation of the model, as shown in the following table.

Table 2. Variable correlation analysis

Variable	dcity	ER	lnTAGR	Mainincome	ecolevel	edulevel	indlevel
dcity	1.0000						
ER	0.0856	1.0000					
lnTAGR	0.0933	0.1315	1.0000				
Mainincome	0.0431	0.2656	0.0628	1.0000			
ecolevel	0.6481	0.1076	0.0093	0.0764	1.0000		
edulevel	0.1600	0.0054	0.1511	-0.0473	0.0677	1.0000	
indlevel	0.2826	0.0923	0.0335	0.0197	0.0425	0.1829	1.0000

$$dcity_{ij} = \alpha_0 + \beta_1 * lnTAGR_{it} + \beta_2 * Mainincome_{it} + \beta_3 * ecolevel_{jt} + \beta_4 * edulevel_{jt} + \beta_5 * indlevel_{jt} + \eta_t + \mu_i + \varepsilon_{it}$$

The model estimates are shown in the table below.

Table 3. Model estimates

	(1) model_1	(2) model_2
ER	0.0123 (0.885)	
lnTAGR	-0.0266* (0.062)	-0.0269* (0.058)
Mainincome	0.000000105** (0.030)	0.000000103** (0.027)
ecolevel	-1.480*** (0.000)	-1.481*** (0.000)
edulevel	-2.519*** (0.000)	-2.519*** (0.000)
indlevel	0.638*** (0.000)	0.639*** (0.000)
_cons	11.97*** (0.000)	11.98*** (0.000)
N	351	351
df_m	6	5
F	63.14	75.98
R2	0.524	0.524
R2_a	0.516	0.517

The estimation results model_2 in the table show that the P value of the coefficients of the explanatory variables (except for the explanatory variable lnTAGR) is less than 0.05 in the significance test of the linear relationship of the overall regression model, and we reject the null hypothesis from the P-value rule, but the explanatory variable lnTAGR can be considered significant at the significance level of 10%, so the coefficients of the explanatory variables in the model are significant. According to the results of the model, the education level of enterprises will decrease after the implementation of the science and technology finance policy, that is, the local government education expenditure/total expenditure will decrease, which may be due to the fact that the science and technology finance policy may attract more funds and resources to flow to the field of science and

5.1.3. Model analysis

In this paper, we make OLS estimates of the explanatory variable and the explanatory variable, and establish two models at the same time, model_1 all the explanatory variables are added to the model, but the results show that the coefficient of the explanatory variable-ER is not significant, so we remove this variable from the model_2, and the results show that the coefficients of the explanatory variable pass the significance F-statistic test. So our model estimates as follows:

technology innovation and development, and reduce the investment in the field of education. At the same time, science and technology finance policies are likely to focus on supporting technological innovation and technological upgrading in the industrial sector to enhance their competitiveness and production efficiency. This technology-intensive nature has led to a tilt in the secondary sector of science and technology finance policies; the negative coefficient of the economic development level and the growth rate of total assets may be due to the small sample size of the selected data, which is not representative of the results and has a certain error. However, the implementation of science and technology finance policies has increased the main business income of enterprises, and increasing the main business income may mean that enterprises have obtained a strong competitive position in the market and have a large market share, thereby improving the market valuation and shareholders' equity of enterprises. This increase in market value is reflected in the total equity of the company, which increases the equity ratio. Therefore, the implementation of science and technology policies for private enterprises will also promote the high-quality development of enterprises to a certain extent.

5.2. Risk Prediction—Intelligent Risk Control Model Based on Random Forest

5.2.1. Risk Rules

A risk rule is a set of guiding principles developed for a specific sector or industry to identify, assess, and manage potential adverse situations or uncertainties. Therefore, we select relevant financial data from the dataset to assess the risk of the enterprise:

Table 4. Risk Rules Table

Indicator	Risk Rules
Total Assets (Total1)	below 50,000 may indicate that the business is not doing well
Main business income (Mainincome)	Below 30,000 may indicate that the company has lost market share and is facing a squeeze from competitors
Equity Rate (ER)	below 0.2 or above 0.8 may indicate an imbalance in the company's financial structure
Capital Liquidity (CA)	below 10,000 may indicate a company's liquidity problems

As for the rule of equity ratio, an excessively high equity ratio may indicate that the company is overly reliant on shareholder capital rather than debt financing. This can lead to companies not being able to take full advantage of the leverage effects of debt financing, missing out on opportunities to scale and improve profitability; A low equity ratio may expose the company to liquidity risk, i.e., it will not be able to repay its maturing debts or meet short-term operating needs in the short term, which may lead to a tight cash situation. Therefore, an excessively high or too low equity ratio of a company will put the company in a risk situation.

5.2.2. Model Establishment and Solving

Identify companies based on set risk rules to get new data sets. When constructing the decision tree, feature engineering is carried out, and numerical features are defined for node splitting, so as to increase the diversity of the model. Data preprocessing of numerical features-filling and normalization of missing values; A complete preprocessing and model training pipeline is constructed, 20% of the data is selected as the training set, and the model generates multiple different training subsets by random sampling of the original dataset. These subsets are often referred to as "bootstrap samples" and thus train the model. When all decision trees are built, the random forest integrates the predictions for each tree. Finally, the established random forest model was evaluated and tuned to improve the generalization ability and prediction performance of the model.

From the predictions of the model, we derive the feature importance. Feature importance refers to the measure of the contribution or influence of each feature to the prediction results of the model in a machine learning model, and for a tree-based random forest model, the importance of features can be calculated by evaluating the change in the information gain or Gini coefficient brought about by each feature in the node splitting in the decision tree.

From the feature importance table, the ER (equity ratio) can be obtained: the most important feature with an importance of 0.495269. Mainincome: The second most important characteristic with an importance of 0.187674. Total1 (Total Assets): The third most important feature with an importance of 0.085773. Total2: Importance is 0.058009. CA (Capital Liquidity): Importance is 0.042621. The results show that the equity ratio, main revenue and total income are the main factors affecting the company's risk assessment. A clear understanding of feature importance can be used to detect anomalies or outliers in the data. If the importance of a feature suddenly decreases or increases, it may indicate that the feature data is abnormal and needs to be further examined and processed, which is the basis for the decision implementation of the so-called "intelligent risk control" model.

5.2.3. Model Evaluation

From the confusion matrix, we can obtain TN=60, which means that the model correctly predicts the number of samples without risk as no risk is 60. FP=0, which means that the number of samples in which the model mispredicts the enterprise without risk as risk is 0; FN=2, which means that the model predicts the number of samples of risky enterprises as no risk is 2; TP=21, indicating that the model predicts the risk as risky with the number of samples is 21.

Therefore, the classification report of the model is obtained:

Table 5. Model classification report

	Precision	Recall	F1 scores	Number of samples	
There is no risk 0	0.97	1.00	0.98	60	Model Accuracy=97.6%
There is a risk 1	1.00	0.91	0.95	23	

From the classification report, the accuracy rate for non-risk enterprises is 97%, and the accuracy rate for risk enterprises is 100%; The recall rate, also known as sensitivity, means that the proportion of enterprises that are correctly predicted by the model as risk-free is 100%, and the proportion of risky enterprises that are predicted by the model to be risky is 91%; The F1 score refers to the harmonic average of precision and recall, and he combines the performance of both, and the F1 score for both risk-free and risky predictions is close to 1, indicating that the model has superior performance and has achieved a good balance between accuracy and recall. The prediction accuracy of the whole model is also as high as 90%, indicating that the model has superior effect.

6. Summary

6.1. Conclusions

This paper selects the dummy variable of whether the city implements science and technology policy as the explanatory variable, selects seven explanatory variables from the perspectives of enterprise characteristics and city characteristics, and analyzes the data through a variety of models, and concludes that there is a two-way causal relationship between science and technology finance and the high-quality development of private enterprises. Science and technology finance provides private enterprises with richer financing services and technical resources, improves their own technical level and comprehensive competitiveness, and promotes the high-quality development of enterprises. With the development of private enterprises, the demand for scientific and technological support is also increasing, which will promote the continuous innovation and improvement of service models of scientific and technological financial institutions to meet the needs of enterprise development.

6.2. Policy Recommendations

With the rapid development of science and technology and the transformation and upgrading of the national economy, science and technology finance, as an important means to promote the high-quality development of private enterprises, has received more and more attention. By studying the specific impact of fintech on private enterprises, this paper draws the following important policy implications:

(1) Build an innovative financial ecosystem. The government can create ways to set up science and technology finance science and technology innovation funds, innovative business incubators and other institutions to use technology to drive the financial system, lower the threshold for financial services, provide private enterprises with all kinds of financial support they need, and help enterprises make breakthroughs in scientific and technological innovation.

(2) Increase efforts in innovative research and development, venture capital, etc. In addition to increasing capital investment in financial innovation and research and development, we should create a good atmosphere for the development of science and technology finance. It is also necessary to seize the opportunity of national financial technology development and actively promote cooperation between the two sides to attract more funds to invest in the development of private enterprises.

(3) Improve the financial service system of science and technology. Policy measures should be implemented to balance the risk relationship between finance and private enterprises. Establish a scientific and technological financial service platform, integrate all kinds of capital, technology and human resources, and provide private enterprises with a full range of financial services and compound talent policies to promote technological innovation, including financing, R&D support, marketing and other aspects of help.

(4) Strengthen the supervision of science and technology finance to ensure the sustainable and healthy development of the science and technology finance industry. There are certain risks in the technology and finance industry, and it is necessary to strengthen supervision. The government should establish and improve the management system of science and technology finance, improve the relevant regulatory system and legal system, improve the efficiency of supervision, and ensure that science and technology finance supports the sustainable and healthy development of private enterprises.

6.3. Future Prospects

With the development of artificial intelligence and big data, technology finance will play a more important role in supporting the high-quality development of private enterprises. It can not only change the way enterprises operate, improve efficiency and expand the market, but also bring innovative financing methods to enterprises, and also provide private enterprises with the opportunity to directly connect with investors around the world, which will reduce the cost of private enterprises in the financing intermediate link and obtain more competitive financing conditions. Of course, the technology financial platform also provides a variety of financial management tools and data analysis services to help enterprises better manage finances, optimize resource allocation, and improve operational efficiency. Through the technology and financial platform, private enterprises can have wider access to the global market, develop overseas business, and expand international trade cooperation, so as to achieve business growth and risk diversification.

First of all, science and technology finance will create more new financial products and services to meet the diversified financing needs of private enterprises. For example, by introducing blockchain technology, cross-border payments

and supply chain financial services can be more convenient and efficient. Second, science and technology finance will stimulate more vitality of scientific and technological innovation. This will provide more opportunities and incentives for private enterprises to achieve breakthroughs and competitive advantages in the field of technology. In addition, it plays an important role in strengthening data security and risk management. In the future, the government and financial institutions will adopt stricter risk prevention and control measures to ensure the security of enterprises' financial and transaction data. At the same time, we will strengthen the data risk prediction and prevention and control mechanism, detect and prevent risks in a timely manner, and reduce non-performing loans and losses. In addition, fintech will also promote the deepening of international cooperation. Its development will not be limited to the domestic market, but will also expand to the international market. The Chinese government will strengthen cooperation with other countries and regions in science and technology finance, which will provide more international financing channels and market opportunities for private enterprises and promote their development on a global scale.

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