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Financial Service and Performance of Chinese Private Companies: The Mediating Role of Technological Innovation

Xiaoran Wang

School of Management, Universiti Sains Malaysia

11800 USM, Penang, Malaysia

Tel: +601164227059 Email: wangxiaoran@student.usm.my

Haslindar Ibrahim (Corresponding author)

School of Management, Universiti Sains Malaysia

11800 USM, Penang, Malaysia

Tel: +6046533379 Email: haslindar@usm.my

Le Bo

School of Management, Universiti Sains Malaysia

11800 USM, Penang, Malaysia

Email: bole@student.usm.my

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Abstract

Financial performance is one of the key essential elements of financial management. Therefore, this research is to investigate the effects of financial service on the financial performance of private listed firms in China and looks at how firm technological innovation plays a mediating role in this relationship. This study includes 4,635 private listed companies

in China from 2013 to 2022 and adopts a robust fixed effects model for benchmark regression. In the robustness test, two-stage least squares, alternative proxies and time segmentation are used to back up the findings. It is found that financial service is significantly and positively related to firm financial performance. Moreover, there is a potential mediating mechanism of corporate technological innovation along this path of the influence of financial service on firm financial performance. The findings provide empirical evidence for private firms and related groups such as policymakers in China.

Keywords: financial service, technological innovation, financial performance, mediation effect

1. Introduction

China is the largest developing country that has shifted from a state-dominated economic system to a market economy. As an important component of the market economy, private listed companies in China are mainly corporations whose shares are held by private companies or private investors and are traded through shares listed on stock exchanges. These companies are different from state-owned enterprises (SOEs), which are companies in which the government holds or controls many shares. In contrast, the control of private listed companies is mainly in the hands of private entrepreneurs and investors (Fan et al., 2013).

However, while the rapid development of private listed companies, there are some shortcomings and weaknesses, which are mainly reflected in the overall weak profitability of private listed companies. The potential reason for this may be that private listed companies are not as strongly supported by national policies as state-owned enterprises and lack government financial support and innovation subsidy. The lack of strong resistance of private firms to the risks associated with changes in business environment will inevitably have an adverse effect on the financial situations, so that the firms may face the challenges of declining profitability, cash flow constraints, or insufficient funds. These phenomena do require researchers to focus on and further analyse the causes.

Nowadays, financial service environment is an important part of business environment, which directly affects the convenience, cost and efficiency of financial activities of enterprises. For example, commercial banks provide deposit and loan services, investment banks provide financing and investment consulting services, and insurance companies provide insurance products and payout services (Park & Kim, 2020). According to Wang et al. (2023), the financial service refers to the financing services that are necessary for firms to operate, focusing on the external environment in which financial institutions provide financial assistance to firms to ensure their proper functioning. Therefore, the first purpose of this study is to investigate the impact of financial services on corporate financial performance.

In the context of market globalization, economic internationalization and fierce technological competition, the success of innovation has become a major choice that affects the fate of enterprises. Innovation is an important symbol for enterprises and the country, to keep pace

with the times, and serves as the primary motivator for the ongoing expansion of private enterprises (Zhu et al., 2021). Technological innovation has become essential for private firms seeking to boost revenue and achieve long-term growth. Moreover, a favourable financial service can provide more convenient financing channels to encourage private enterprises to increase their investment in R&D, which increases the competitiveness of products or services and helps to improve financial performance. Thus, this study also tries to take technological innovation as a mediating variable to explore the impact of financial service on the financial performance of private enterprises.

This study provides reference value in three aspects. First, correctly understanding and grasping the connection between financial service and private firms' performance is conducive to providing more scientific theoretical support for the optimization of financial service. Second, this study thinks differently about firm technological innovation, examines the mediating effect of firm technological innovation on the relationship between financial services and private firm financial performance, and at the same time provides a deeper understanding of how financial services indirectly affect private firm financial performance. Moreover, this relationship has not been tested in previous studies and provides new perspectives for future research. Third, this study also provides a real basis for the application of transaction cost theory and resource-based view (RBV) theory.

2. Literature Review

2.1 Theoretical Discussion

2.1.1 Transaction Cost Theory

Transaction cost theory is a central theoretical framework in the new institutional economics and was first developed by Williamson (1975). The theory aims to explain the various costs involved in market transactions and explores how transaction costs affect the choice of the form of market organization and the way in which transactions are conducted. Due to the different roles of enterprises, transaction costs often exist, such as information search and processing costs, negotiation cost, monitoring and enforcement costs and information asymmetry costs (Schmidt & Wagner, 2019).

Financial service can help private firms to obtain financing to meet their growth and operational needs. However, the financing process involves transaction costs such as information disclosure and credit assessment. Chang and Choi (1988) in accordance with transaction cost theory, recognize that by reducing these transaction costs, financial institutions could offer more competitive financing terms and reduce firms' financing costs, thereby improving performance. Moreover, Kahihu et al. (2021) examine that financial service can provide a variety of risk management tools, such as insurance and derivatives, to help private firms manage market risk and financial risk. However, using these tools also entail facing transaction costs such as contract negotiation and enforcement. By reducing these transaction costs, financial institutions can provide more effective risk management

tools, reduce firms' risk exposure and improve performance.

2.1.2 Resource-Based View Theory

An approach to management known as resource-based view theory aims to clarify how an organization gains a sustainable edge in a highly competitive market (Grant, 1991). Wernerfelt published the Resource-based View of the Firm in 1984, marking the birth of RBV Theory (Barney et al., 2021). According to this theory, a company's ability to stay competitive and succeed in the long run is highly dependent on its innovation resources. These resources are rare, valuable, difficult to imitate and substitute, and can give rise to differences in competitive capabilities between firms, which ultimately reflect differences in firm performance.

Irwin et al. (1998) argue that the impact of technological innovation on firm performance can be explained by RBV theory too. Specifically, the essence of technological innovation is the firm's knowledge output, which is the rational combination and use of the firm's own resources. Although the RBV theory focuses on the internal resources of the firm, the application of RBV explicitly includes many resources derived from the external environment. The theory recognizes that the success of a firm is dependent on the adaptation and use of external environmental resources, such as financial service (Arya & Lin, 2007).

2.2 Hypothesis Development

2.2.1 Financial Service and Financial Performance

Additionally, previous studies find that there exists the impact of the financial service on financial performance from different views. For example, Jo et al. (2015) used a dataset of 4,924 firms from 29 countries over the period 2002-2011 and discover that a healthy, stable and efficient financial service environment can provide the financing channels, financial products and services needed by firms, which directly or indirectly affects financial performance.

From the perspective of capital market, Tröger (2020) reveals that a mature and healthy European capital market is conducive to the capital operation of private companies, which helps them to raise performance and improve their capital strength and visibility, such as stock issuance, bond issuance. In terms of financial products and services, according to Qiu (2021), banking facilities aid in risk management and meeting the varied financial requirements of customers, which in turn boosts their financial performance of Indian companies. For example, risk management products and cross-border payment can help enterprises reduce risks and costs.

Therefore, by reducing transaction costs, financial institutions can better support the financing needs of private enterprises, which can boost their competitiveness and financial performance. So, as stated below, this research proposes hypothesis H1:

H1: Financial service has a positive and significant impact on financial performance.

2.2.2 Financial Service and Technological Innovation

In explaining the impact of financial service on technological innovation of private firms, resource base theory can be used to analyse its impact (Donnellan & Rutledge, 2019). The financial service environment provides private companies with a variety of resources, such as capital, access to financing, financial expertise and experience, but the most important of these is the source of capital. These resources are essential for technological innovation in firms.

Sanga and Aziakpono (2022) indicate that financial institutions provide private companies with access to finance, which provides the necessary financial resources for technological innovation. Private enterprises usually need a large amount of capital for technology R&D and innovation projects, and the financing services of financial institutions can help them solve the problem of capital shortage and promote the advancement of technological innovation. Additionally, Perla et al. (2021) reveal private companies are more likely to invest in research and development (R&D) and innovation when they receive financial assistance. Technological innovation requires numerous R&D activities. Companies can boost their investment in these areas and innovation efforts can be more efficient and effective with the help of financial institutions.

To summarize, a good financial service environment provides sufficient financial security for private companies to strengthen technological innovation and mitigates the financing discrimination faced by private companies. Accordingly, this study proposes hypothesis H2:

H2: Financial service has a positive and significant impact on technological innovation.

2.2.3 Technological Innovation and Financial Performance

Technological innovation enables private companies to better cope with challenges and uncertainties in the market. Through continuous improvement and innovation, firms can reduce risk and differentiate themselves from the competition (Mohtar, 2022). Moreover, as Opoku-Mensah et al. (2021) reveal, technical innovation necessitates significant R&D investment, specialized employees, and modern equipment. Besides, it be found that R&D investment has a positive effect on the economic value of a firm. Firms that can efficiently integrate resources and rapidly transform technological innovations into products or services are more probable to gain a competitive advantage and contribute to firm performance. Lome et al. (2016) highlight that technological innovation helps to improve production, management, and operational efficiency, and that by introducing new technologies and processes, private companies can minimize expenses and maximize the effectiveness of their resource utilization, leading to improved performance.

To summarize, the RBV theory explains the impact of corporate technological innovation on the performance of private companies. As a scarce and not easily imitated resource,

technological innovation helps private companies establish a sustained advantageous position in competition. So, this study proposes the corresponding hypothesis H3 as follows:

H3: Technological innovation has a significant impact on financial performance.

3. Data and methodology

3.1 Sample Selection and Data Source

This paper utilizes the data of A-share private listed companies in Shanghai and Shenzhen from 2013 to 2022 as a sample to test the impact of financial services on the financial performance of private enterprises. The sample treatment of this study is as follows: (1) excluding listed companies labeled with "ST"; (2) excluding samples of state-owned enterprises and other non-private enterprises; (3) excluding companies with missing financial data; and (4) excluding sample data of financial industry. After the above screening, a final data sample of 4635 private enterprises was obtained. The data come from China Statistical Yearbook and CSMAR database[1].

3.2 Variable Design and Measurement

First, the dependent variable in this study is the financial performance of private companies, which is usually measured by the accounting indicator return on assets (ROA). It is measured by dividing net profit by total assets. To a certain extent, it reflects the overall financial health of the firm. A higher ROA indicates that the firm generates more profit in a given period of time, which means that the firm is more profitable (Rahman & Chen, 2023).

Second, the independent variable is financial services (FIN). The natural logarithm of total RMB loans of financial institutions is used as a measure. In China, the financial institutions' RMB various loans denotes a portion of RMB loans issued by financial institutions to market players (Park & Kim, 2020). It reflects the financial institutions' financial support to private enterprises. A well-developed financial services system enhances the availability of financing for firms and contributes to their financial performance.

Third, the mediating variable is corporate technological innovation (PAT), measured by the natural logarithm of the number of patent applications for technological innovation plus one (Kong et al., 2022). This is since the existence of zero value of the number of patent applications is considered. It reflects the level of activity of the firm in R&D and innovation.

Fourth, the control variables in this study include firm size, leverage, revenue growth rate, age of the firm, urbanization rate, and residential income share. The specific measurements are as follows:(1) The indicator of firm size is measured by the natural logarithm of the firm's total assets (Shang, 2020). (2) Total liabilities divided by total assets as an indicator of

[1]https://www.stats.gov.cn/sj/ndsj/; https://www.csmar.com/en/

leverage (Qi et al., 2022). (3) Divide the value of current operating income minus previous period's operating income by previous period's operating income to reflect the operating income growth rate (Didier et al., 2021). (4) The reporting period of a firm minus the year in which the firm went public is taken as the age of the firm after taking the natural logarithm (Qi et al., 2022). (5) The urbanization rate represents the proportion of China's urban population in the total resident population (Dai et al., 2017). (6) Residents' income share refers to the ratio of disposable income per capita of residents in each region to the gross domestic product per capita of that region (Beramendi & Cusack, 2004).

3.3 Model Establishment

This study will employ the panel regression model to evaluate hypothesis 1. Thus, the direct correlation between financial services and the financial performance of private listed corporates was evaluated using Equation 1.

$$ROA_{ijt} = \alpha_0 + \alpha_1 FIN_{it} + \sum(CV) + \sum year + \sum ind + \varepsilon_{ijt} \quad \text{(Eq1)}$$

i is the *i*th enterprise. *j* is the *j*th province. *t* is the *t*th year. *ROA* is financial performance of the *i*th corporate in the *j*th province in year *t*. *FIN* means financial service. α_i is the coefficient of financial service. Where *CV* represents the control variables, including *SIZ*, *LEV*, *GRO*, *AGE*, *URB* and *INC*. *ind* represents industry fixed effects, and *year* represents time fixed effects.

According to the direct effect analysis, this research further analyses the mediating effect. Based on stepwise regression method, the first step was to examine the effect of financial services on financial performance. This relationship has been verified in Equation 1. The second step is to test the effect of financial services on technological innovation. Thus, this research proposes Equation 2, which is given below.

$$PAT_{ijt} = \alpha_0 + \alpha_1 FIN_{it} + \sum(CV) + \sum year + \sum ind + \varepsilon_{ijt} \quad \text{(Eq2)}$$

PAT_{it} is the number of patents application of the *i*th firm in *j*th province in the year *t*. If this coefficient is significant, it reflects it is very likely that the mediating effect exists. The third step is to analyse the financial services, technological innovation and financial performance by putting them into the same model, and the formula is as follows.

$$ROA_{ijt} = \alpha_0 + \alpha_1 FIN_{it} + PAT_{ijt} + \sum(CV) + \sum year + \sum ind + \varepsilon_{ijt} \quad \text{(Eq3)}$$

4. Findings

4.1 Descriptive Statistics

Table 1 displays the descriptive statistics, and the observed value of each variable is 30351. The mean value of ROA is 0.043, which indicates that over the ten-year period, private listed companies have earned an average of about 4.3% profit from their total assets. However, the standard deviation of ROA is 0.064, implying that the ROA value fluctuates around the mean. Moreover, the mean value of financial service is 11.159 and the standard deviation is 0.755. The standard deviation is smaller than the mean value, which represents financial service

environment of Chinese provinces is not very volatile. However, it still has instability, which may be due to the influence of financial market conditions, competition of financial institutions, risk compensation mechanism and other factors. Therefore, the better the financial services environment, the better it will be for private companies to access different types of financing, manage capital and drive business growth (Um & Kim, 2019).

Table 1. Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
ROA	0.043	0.064	-0.207	0.214
FIN	11.159	0.755	8.827	12.439
PAT	1.838	1.676	0.000	6.163
SIZ	22.230	1.304	19.942	26.105
AGE	2.009	0.966	0.000	3.367
GRO	0.153	0.351	-0.505	1.824
LEV	0.410	0.203	0.059	0.885
URB	0.690	0.118	0.430	0.893
INC	0.436	0.053	0.340	0.558

Note: ROA means firm financial performance. FIN denotes financial service. PAT means firm technological innovation. SIZ is firm size. AGE is firm age. GRO means revenue growth rate. LEV denotes leverage rate. URB is urbanization rate. INC means residents' income level.

4.2 Regression Results

Before regression analysis, correlation analysis test is done. Pearson's correlation matrix is a method used to measure the linear correlation between two variables. Initially, the correlation coefficient between the variables was found to be less than 0.8, and there is no possibility of multicollinearity problem (Luo et al., 2021). Panel data are generally validated among pooled OLS model, fixed effect model, and random effect model. After the screening of F-test, LM-test, and Hausman-test, $P<0.1$, so the most suitable model for this study is the fixed effect model.

Model (1) and (2) in Table 2 show that financial service is significantly correlated with financial performance and technological innovation at the 1% significance level with a coefficient of 0.003 and 0.272. This finding suggests the higher the RMB loans granted by financial institutions to economic entities, the higher the performance and technological innovation of private firms accordingly. This result is consistent with the prior study by Alam et al., (2022). In model (3), the regression coefficient of FIN and PAT are also statistically significant. It indicates that firm technological innovation mediates the regression because

technological innovation indirectly changes the direct path between financial service and financial performance of private listed firms. Therefore, all hypothesizes are supported by the study's findings.

Table 2. Benchmark Regression

VARIABLES	(1) ROA	(2) PAT	(3) ROA
FIN	0.003***	0.272***	0.003***
	(5.956)	(19.208)	(4.513)
PAT			0.003***
			(13.682)
SIZ	0.015***	0.395***	0.014***
	(44.061)	(42.627)	(40.044)
AGE	-0.015***	-0.249***	-0.015***
	(-40.324)	(-24.644)	(-38.437)
GRO	0.048***	-0.074***	0.048***
	(38.895)	(-3.341)	(39.254)
LEV	-0.148***	-0.210***	-0.148***
	(-66.322)	(-4.306)	(-66.338)
URB	-0.023***	-0.666***	-0.021***
	(-7.364)	(-8.033)	(-6.728)
INC	0.004	-0.876***	0.007
	(0.662)	(-5.889)	(1.109)
Constant	-0.242***	-9.176***	-0.215***
	(-25.716)	(-37.270)	(-22.567)
Year Effect	YES	YES	YES
Ind Effect	YES	YES	YES
Observations	30,351	30,351	30,351
R-squared	0.324	0.309	0.328
r2_a	0.323	0.308	0.327
F	286.193***	497.057***	283.592***

Note: ROA means firm financial performance. FIN denotes financial service. PAT means firm technological innovation. SIZ is firm size. AGE is firm age. GRO means revenue growth rate. LEV denotes leverage rate. URB is urbanization rate. INC means residents' income level. *** p<0.01, ** p<0.05, * p<0.1. t-statistics in parentheses.

4.3 Robustness Test

In the robustness test, return on equity (ROE), which measures the realization of shareholders' equity, is chosen as an alternative measure of financial performance because ROE considers the firm's profitability and financial structure. The number of patents granted (PAT1) is used as a proxy variable to comprehensively measure the firm's level of corporate technological innovation. The number of patents granted reflects a firm's achievements and strengths in technological innovation, as well as the technological rights and interests

acquired by the firm in a particular field (Liu et al., 2021).

From the regression results of model (1) (2) in Table 3, it can be found that in financial service are significantly and positively related to financial performance and technological innovation. This is because the coefficients are 0.008 and 0.277 and are significant at the 1% level. In model (3), the coefficients indicate that technological innovation plays an intermediary role and mediates the direct relationship between financial service and financial performance. So, the findings of this study are consistent with the results of the analysis of ROA as a measure of financial performance of private listed companies. Therefore, H1-H3 are verified.

Table 3. The Regression Result of Alternative Proxies

	(1)	(2)	(3)
VARIABLES	**ROE**	**PAT1**	**ROE**
FIN	0.008***	0.277***	0.007***
	(6.980)	(20.743)	(6.027)
PAT1			0.004***
			(8.229)
SIZ	0.033***	0.361***	0.032***
	(39.944)	(40.936)	(37.849)
AGE	-0.026***	-0.201***	-0.025***
	(-35.185)	(-20.792)	(-34.192)
GRO	0.096***	-0.112***	0.097***
	(37.457)	(-5.465)	(37.678)
LEV	-0.224***	-0.158***	-0.223***
	(-35.872)	(-3.467)	(-35.831)
URB	-0.047***	-0.643***	-0.044***
	(-7.181)	(-8.309)	(-6.786)
INC	0.005	-0.593***	0.008
	(0.421)	(-4.218)	(0.610)
Constant	-0.620***	-8.789***	-0.585***
	(-29.449)	(-37.563)	(-27.372)
Year Effect	YES	YES	YES
Ind Effect	YES	YES	YES
Observations	30,351	30,351	30,351
R-squared	0.238	0.313	0.239
r2_a	0.237	0.312	0.238
F	118.575***	491.498***	116.089***

Note: ROE means firm financial performance. FIN denotes financial service. PAT1 means firm technological innovation. SIZ is firm size. AGE is firm age. GRO means revenue growth

rate. LEV denotes leverage rate. URB is urbanization rate. INC means residents' income level. *** p<0.01, ** p<0.05, * p<0.1. t-statistics in parentheses.

4.4 Endogeneity Test

To weaken the endogeneity between financial services and private firms' financial performance, this research adopts two-stage least squares (2SLS) based on instrumental variables as an alternative assessment measure. In this study, the first-order lag of the independent variable is chosen as the instrumental variable because it is usually not correlated with the disturbance term, and it is considered exogenous. Instrumental variables need to be correlated with the explanatory variables and the correlation cannot be too weak. According to Results Tables 4, the Cragg-Donald Wald F-statistic is much greater than 10, so the instrumental variable proves not to be a weak instrumental variable.

In Table 4, it is clear from the tests of models (1) (2) that financial service is positively correlated with financial performance and firm technological innovation respectively at the 1% significance level. Model (3) indicates that technological innovation plays a mediating role and becomes a potential mechanism between financial services and financial performance due to the result is significant at 1% level. In other words, it is consistent with the results of benchmark regression and ease the endogeneity problem.

Table 4. The Regression Result of 2SLS Method

	(1)	(2)	(3)
VARIABLES	**ROA**	**PAT**	**ROA**
FIN	0.003***	0.257***	0.003***
	(5.470)	(16.593)	(4.170)
PAT1			0.003***
			(13.155)
CV	YES	YES	YES
Constant	-0.264***	-9.093***	-0.235***
	(-25.793)	(-33.958)	(-22.784)
Year Effect	YES	YES	YES
Ind Effect	YES	YES	YES
Observations	25,465	25,465	25,465
R-squared	0.305	0.321	0.310
r2_a	0.304	0.320	0.309
F	220.444***	454.412***	217.645***
Cragg-Donald Wald F statistic	2.1e+06	2.1e+06	2.1e+06

Note: CV means control variables. ROE means firm financial performance. FIN denotes financial service. PAT1 means firm technological innovation. SIZ is firm size. AGE is firm age. GRO means revenue growth rate. LEV denotes leverage rate. URB is urbanization rate.

INC means residents' income level. *** p<0.01, ** p<0.05, * p<0.1. t-statistics in parentheses.

4.5 Heterogeneity Analysis

For further analysis, this section divides the entire time from 2013 to 2022 into 2013 to 2019 and 2020 to 2022 to determine if the direct effect and the mediating effect are affected by the Covid-19 epidemic. In Table 5, Model (1), Model (2) and Model (3) represent the results before the epidemic, and it can be found that the regression coefficients of financial services are 0.003, 0.278 and 0.002 respectively. They are all positive and all significant. The coefficient of enterprise technological innovation is 0.003, and it is significant at the level of 1%. This shows that before the epidemic, financial services improved with the improvement of private enterprise performance, and enterprise technological innovation played an intermediary role.

Model (4), (5) and (6) represent the results after the epidemic, and it can be found that the regression coefficients of financial services are 0.005, 0.266 and 0.004, respectively. They are all positive and all significant. The coefficient of enterprise technological innovation is 0.003, and it is significant at the level of 1%. This shows that after the epidemic, financial services improve with the improvement of private enterprise performance, and enterprise technological innovation also plays an intermediary role. Thus, the three steps of the mediating effect pass consistent with the benchmark regression for both pre-pandemic and post-pandemic periods. So, the three hypotheses are tested again.

Table 5. Pre-covid Period (2013-2019) & Pro-covid Period (2020-2022)

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	**ROA**	**PAT**	**ROA**	**ROA**	**PAT**	**ROA**
FIN	0.003***	0.278***	0.002**	0.005***	0.266***	0.004***
	(3.683)	(14.672)	(2.528)	(5.085)	(12.367)	(4.182)
PAT			0.003***			0.003***
			(10.964)			(8.454)
CV	YES	YES	YES	YES	YES	YES
Constant	-0.214***	-9.044***	-0.187***	-0.271***	-9.295***	-0.243***
	(-17.822)	(-27.970)	(-15.474)	(-17.091)	(-23.577)	(-15.104)
Year Effect	YES	YES	YES	YES	YES	YES
Ind Effect	YES	YES	YES	YES	YES	YES
Observations	18,235	18,235	18,235	12,116	12,116	12,116
R-squared	0.306	0.330	0.310	0.368	0.284	0.372
r2_a	0.304	0.329	0.309	0.367	0.282	0.370
F	196.171***	374.491***	192.068***	163.658***	206.305***	162.056***

Note: ROA means firm financial performance. FIN denotes financial service. PAT means firm

technological innovation. SIZ is firm size. AGE is firm age. GRO means revenue growth rate. LEV denotes leverage rate. URB is urbanization rate. INC means residents' income level. t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0. 1. t-statistics in parentheses.

5. Discussion and Conclusions

5.1 Theoretical Implications

Theoretically, this study extends the framework of factors affecting financial performance. Regarding the influence of firm financial performance, prior research has concentrated on internal factors of companies. This study mainly focuses on financial services. Moreover, the advantage of this research is that it utilizes the resource-based theory and transaction cost theory to construct as well as unblock the logical association between the factors, which better highlights the critical role played by technological innovation.

5.2 Practical and Social Implications

First, the research offers reference value for the reasons why the government and private enterprises cooperate with each other. For corporate managers, managers of private listed companies can utilize the results of the study to explain the influencing factors of corporate such as ROA and ROE, so as to make decisions and implementations to improve corporate performance. For local governments, government can provide experience in easing financing and reducing transaction costs for private enterprises in China.

5.3 Limitations and Suggestions for Future Research

This study takes Chinese A-share listed companies in Shanghai and Shenzhen as the survey object and does not include all private enterprises in China. Moreover, the industry to which private enterprises belong does not include the financial sector because it is subject to specific regulations set by the central bank. Future studies may look at the same period but will focus on the banking sector to determine its performance.

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Authors contributions

Dr. Xiaoran Wang and Dr. Haslindar Ibrahim were responsible for study design, writing, review and revising. Dr. Xiaoran Wang was responsible for data collection. Dr. Xiaoran Wang drafted the manuscript, and Dr. Le Bo revised it. All authors read and approved the final manuscript. In this paragraph, also explain any special agreements concerning authorship, such as if authors contributed equally to the study.

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Obtained.

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The Publication Ethics Committee of the Macrothink Institute.

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The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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No additional data are available.

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