

# *The Influence of Patient Capital on the Cost of Debt*

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**Abstract:** This study empirically investigates the impact of patient capital on the cost of debt based on a sample of A-share listed companies in China from 2009 to 2024. We find that the patient capital reduces the firms' cost of debt by improving corporate governance and increasing firm value. After controlling for heteroscedasticity and endogeneity, our conclusions remain valid. Our study further expands the study on the economic consequences of patient capital and reveals that patient capital can reduce corporate debt financing costs, thereby emphasizing that the government should encourage the development of patient capital. Furthermore, our study also provides practical guidance for reducing corporate financing costs.

## 1. Introduction

From an investor's perspective, patient capital refers to long-term investment activities that prioritize long-term returns. From a corporate perspective, patient capital represents long-term financing obtained by enterprises. Existing studies have extensively examined the impact of patient capital on Chinese enterprises. For example, Chu and Zhang (2025)<sup>[1]</sup> find that patient capital can alleviate firms' financing constraints and improve corporate governance, thereby effectively enhancing corporate resilience. Liu and Chen (2025)<sup>[2]</sup> find that patient capital promotes high-quality enterprise development.

However, the direct link between patient capital and corporate financing has not been fully addressed in the literature. Given that capital shortage is a major constraint on the development of Chinese enterprises, and debt financing has long dominated the financing structure of Chinese firms, this study focuses on the impact of patient capital on the cost of debt.

We perform an empirical analysis based on a sample of Chinese A-share listed firms from 2009 to 2024. We find that patient capital reduces the cost of debt by improving corporate governance and increasing firm value. That is, the growth of patient capital exerts a significant negative effect on the cost of debt.

This study makes the following contributions. First, our study further extends the literature on the economic consequences of patient capital and reveals that patient capital can lower the debt financing cost of Chinese enterprises, thus highlighting that the Chinese government should encourage the development of patient capital.

Second, a firm's cost of debt directly affects its innovation capacity, operational efficiency, and sustainable development (Yao et al., 2022)<sup>[3]</sup>. Hence, prior studies have extensively examined the

determinants of firms' cost of debt from both internal and external perspectives. However, prior studies have paid insufficient attention to external financing and accepting external investment-related factors. By empirically examining the impact of patient capital on firms' cost of debt, this study provides practical guidance for reducing firms' cost of debt.

The remainder of this study is organized as follows. Section 2 describes the institutional background and develops the hypotheses. Section 3 explains the sample and model. Section 4 reports the empirical results and robustness tests. Section 5 offers conclusions.

## **2. Institutional Background and Hypothesis Development**

### **2.1. Patient Capital**

Patient capital is a form of capital that focuses on long-term investment. Some existing studies categorize patient capital into two broad types: relational debt, mainly represented by bank loans, and stable equity, mainly held by institutional investors (Hu et al., 2025)<sup>[4]</sup>. In addition, Lin and Wang (2017)<sup>[5]</sup> define patient capital as long-term-oriented capital, where investors expect the investee to achieve growth in the future and thereby obtain returns over the long run.

To promote the development of patient capital, existing studies have extensively examined its impact on high-quality enterprise development. Ran (2025)<sup>[6]</sup> finds that patient capital promotes corporate digital transformation by alleviating information asymmetry and providing long-term funding. Liu and Chen (2025)<sup>[2]</sup> find that an increase in strategic equity, a component of patient capital, fosters high-quality enterprise development. Wu et al. (2022)<sup>[7]</sup> find that monitoring by stable equity investors facilitates external technology acquisitions and improves firm performance. Aghion et al. (2013)<sup>[8]</sup> find that patient capital significantly promotes corporate innovation by reducing pressure on management to meet short-term performance targets.

However, the direct impact of patient capital on corporate financing has not been fully explored in the literature. Debt financing is the most important source of capital for Chinese firms and plays a critical role in operations. Therefore, by examining the effect of patient capital on the cost of debt, this study helps reveal the interaction between long-term institutional investors and Chinese firms, so as to better leverage the role of patient capital in economic development.

### **2.2. The Cost of Debt**

The cost of debt refers to the expenses borne by firms to obtain external debt capital, as well as the rate of return required by creditors. Since debt financing is the most dominant and heavily relied-upon financing method for Chinese enterprises (Liu and Lu, 2024)<sup>[9]</sup>, the cost of debt directly affects firms' operating costs and financial risks.

Existing studies have extensively examined the determinants of the cost of debt from various perspectives. Xu et al. (2025)<sup>[10]</sup> find that better ESG performance reduces the cost of debt by mitigating the risk of supply chain disruptions. Wang (2024)<sup>[11]</sup> finds that accounting conservatism lowers firms' cost of debt by improving the quality of accounting information. Guan and Wang (2023)<sup>[12]</sup> show that corporate social responsibility engagement reduces default risk, thereby decreasing the cost of debt. Li (2022)<sup>[13]</sup> finds that internal control quality reduces the cost of debt by lowering operational risk and information asymmetry.

However, the impact of patient capital on the cost of debt has not been sufficiently explored in the literature. This study aims to fill this gap in the research field by empirically examining the effect of patient capital on the cost of debt.

## 2.3. Hypothesis Development

The long-term nature of patient capital allows investors to continuously acquire the firm's operational information over an extended period, thereby mitigating the information asymmetry between management and stakeholders and further enhancing corporate governance quality (Tang et al., 2026)<sup>[14]</sup>. Consequently, given that creditors tend to demand a lower rate of return from firms with superior corporate governance, patient capital is expected to reduce the cost of debt through improving corporate governance.

Furthermore, by extending the investment horizon and tolerating phased performance fluctuations, patient capital provides firms with the necessary time and resources for strategic transformation and technological innovation, which in turn enhances firm value (Yan, 2025)<sup>[15]</sup>. Since firm value is also a critical factor influencing the cost of debt, patient capital may additionally reduce the cost of debt by increasing firm value.

In summary, patient capital can improve corporate governance and enhance firm value, thereby reducing firms' cost of debt.

Based on the above analysis, we propose the following hypothesis:

*Hypothesis: The expansion of patient capital is negatively associated with the cost of debt.*

## 3. Methodology

### 3.1. Sample Selection

We focus on Chinese A-share listed companies, with all of the data being sourced from the China Stock Market and Accounting Research (CSMAR) database. The original sample data were screened for validity as follows: 1) Delete the finance company samples; 2) Delete the ST (special treatment) and PT (particular transfer) company samples; 3) Delete all samples with missing values.

To control for the impact of the 2008 financial crisis on corporate financing, we select 2009 as the starting year of the sample period. Thus, we obtain 45,607 firm-year observations between 2009 and 2024. To mitigate the influence of outliers, we winsorize all of the continuous variables at the 1 % and 99 % levels.

### 3.2. The Measurement of the Cost of Debt (COD)

Following Shi et al. (2024)<sup>[16]</sup>, we use the proportion of the sum of interest expenses, handling fee expenses and other financial expenses to the total liabilities (*COD*) to measure the cost of debt.

### 3.3. The Measurement of Patient Capital (Pat)

Following Qiu et al. (2024)<sup>[17]</sup>, the *Pat* is calculated as follows:

$$\begin{aligned}
& Pat_t \\
& = \frac{\text{The number of shares held by long – term institutional investors}_t}{\text{The total number of shares}_t} \\
& - \frac{\text{The number of shares held by short – term institutional investors}_t}{\text{The total number of shares}_t} \\
& + \frac{\text{The shareholding ratio of institutional investors}_t}{\text{The SD of the shareholding ratio of institutional investors over the past 3 years}_t} \\
& + \frac{\text{Non – current liabilities}_t}{\text{Net assets}_t + \text{Non – current liabilities}_t} - \frac{\text{Short – term borrowings}_t}{\text{Net assets}_t} + \frac{\text{Net assets}_t}{\text{Net assets}_{t-1}} \\
& + \frac{\text{The number of the words related to managerial myopia in the MD\&A}_t}{\text{The total word count in the MD\&A}_t}
\end{aligned} \tag{1}$$

### 3.4. Control Variables

Following Shi et al. (2024)<sup>[16]</sup>, the control variables include the natural logarithm of total assets (*LnSize*), the total liabilities divided by total assets (*Lev*), net profit divided by total assets (*ROA*), a dummy variable that equals 1 if firm *i* is a state-owned enterprise and 0 otherwise (*SOE*), the natural logarithm of firm age (*Age*), and the net value of fixed assets divided by total assets (*FA*). In addition, we include industry and year fixed effects in the model.

### 3.5. Model

To test the hypothesis, we establish the multiple regression model below:

$$\begin{aligned}
COD_{i,t} = & \beta_0 + \beta_1 Pat_{i,t} + \beta_2 LnSize_{i,t} + \beta_3 Lev_{i,t} + \beta_4 ROE_{i,t} + \beta_5 SOE_{i,t} + \beta_6 Age_{i,t} + \beta_7 FA_{i,t} \\
& + \text{industry Dummies} + \text{Year Dummies} + \varepsilon_{i,t}
\end{aligned} \tag{2}$$

## 4. Empirical Results

### 4.1. Descriptive Statistics

Table 1 presents the descriptive statistics of the main variables. The results show that the mean and standard deviation of *COD* are 0.006 and 0.036, respectively, indicating considerable variation in debt costs across firms.

Table 1: Descriptive statistics.

Variables	N	Mean	Std. Dev.	min	Median	max
COD	45,607	0.006	0.036	-0.182	0.011	0.069
Pat	45,607	0.237	0.181	0.021	0.207	0.910
LnSize	45,607	22.107	1.317	19.546	21.914	26.161
Lev	45,607	0.421	0.214	0.051	0.409	0.959
ROA	45,607	0.036	0.070	-0.307	0.038	0.209
SOE	45,607	0.344	0.475	0.000	0.000	1.000
Age	45,607	2.905	0.350	1.792	2.944	3.555
FA	45,607	0.207	0.159	0.002	0.173	0.691

## 4.2. Baseline Regression

Table 2: Baseline regression.

Variables	(1)	(2)
	COD	COD
Pat	<b>-0.010***</b> <b>(-12.162)</b>	<b>-0.010***</b> <b>(-9.756)</b>
Constant	-0.028*** (-8.950)	-0.028*** (-5.217)
Control variables	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Adj_R-square	0.3127	0.3127
F	2307.83***	434.97***
Cluster by firm	No	Yes
Observations	45,607	45,607

Note: \*\*\*, \*\*, and \* indicate significance at the 1 %, 5 %, and 10 % levels, respectively, or better.

Columns 1 and 2 of Table 2 present the estimation results of the multiple linear regression without and with firm-level clustered robust standard errors, respectively. The results show that the coefficient of *Pat* is -0.010 and significant at the 1% level, indicating that the development of patient capital has a significant negative impact on the cost of debt.

The results in Table 2 reveal that the development of patient capital improves corporate governance and enhances firm value, thereby reducing the cost of debt.

## 4.3. Robustness Tests

### 4.3.1. Firm Fixed Effects Model and 2SLS Regression

To further control for the impact of individual heterogeneity on the results, we employ both fixed effects and random effects models that account for firm-level effects. The Hausman test reported in Table 3 indicates that the fixed effects model is more appropriate. The results of the fixed effects model in column 1 of Table 3 show that the coefficient of *Pat* is -0.009 and significant at the 1% level, indicating that patient capital still has a significant negative impact on the cost of debt after controlling for firm-specific effects.

Furthermore, we further address potential endogeneity issues using a two-stage regression. We use the mean *Pat* of all other firms in the same industry in year *t*, excluding firm *i* (*Ind\_Pat*), as an instrumental variable. Columns 3 and 4 of Table 3 present the results of the two-stage regression, showing that *Ind\_Pat* has a significant positive impact on *Pat*, and the predicted value of *Pat* (*Pre\_Pat*) has a significant negative impact on *COD*. Therefore, the two-stage regression results further support the conclusion that patient capital is associated with lower corporate debt financing costs.

Table 3: Firm fixed effects model and 2SLS regression.

Variables	(1)	(2)	(3)	(4)
	COD	COD	Pat	COD
	FE Model	RE Model	First Stage	Second Stage
Pat	<b>-0.009***</b> <b>(-9.687)</b>	-0.009*** (-11.245)		
Ind_Pat			<b>0.312***</b>	

			(5.184)	
Pre_Pat				-0.089** (-2.376)
Constant	-0.090*** (-11.951)	-0.043*** (-9.647)	0.380*** (10.468)	0.007 (0.450)
Control variables	Yes	Yes	Yes	Yes
Industry FE	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	No	No
Adj_R-square	0.1473	0.1454	0.0543	0.1589
F/Wald chi <sup>2</sup>	332.18***	11043.95***	69.71***	3956.77***
Cluster by firm	Yes	Yes	Yes	Yes
Hausman test	chi2=340.53 (P=0.000)		-	-
Observations	45,607	45,607	45,607	45,607

Note: \*\*\*, \*\*, and \* indicate significance at the 1 %, 5 %, and 10 % levels, respectively, or better.

### 4.3.2. Other Robustness Tests

In this section, as robustness checks, we re-examine the hypothesis by changing the sample period and the measures of the cost of debt.

First, to control for the impact of the “deleveraging” policy implemented in 2015 on corporate debt financing behavior, we re-examine the hypothesis using data from 2016 to 2024. Column 1 of Table 4 shows that the coefficient of *Pat* is -0.010 and significant at the 1% level.

Second, we use interest expenses divided by total liabilities (*COD\_2*) to measure the cost of debt and re-examine the hypothesis. Column 2 of Table 4 shows that the coefficient of *Pat* is -0.007 and significant at the 1% level.

Table 4: Other robustness tests.

Variables	(1)	(2)
	COD 2016≤Year≤2024	COD_Interest Alternative measure of the cost of debt
Pat	<b>-0.010***</b> <b>(-9.265)</b>	<b>-0.007***</b> <b>(-19.053)</b>
Constant	-0.021*** (-3.847)	-0.000 (-0.077)
Control variables	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Adj_R-square	0.3124	0.0279
F	374.97***	55.59***
Cluster by firm	Yes	Yes
Observations	30,232	45,607

Note: \*\*\*, \*\*, and \* indicate significance at the 1 %, 5 %, and 10 % levels, respectively, or better.

## 5. Conclusions

This paper empirically studies the impact of patient capital on the cost of debt based on a sample

of Chinese A-share listed companies from 2009 to 2024. We find that the expansion of patient capital can improve corporate governance and enhance firm value, thereby reducing corporate debt costs. That is, the development of patient capital has a negative effect on corporate debt costs.

Our study further extends the literature on the economic consequences of patient capital and reveals that patient capital can lower the debt financing cost of Chinese enterprises, highlighting that the Chinese government should encourage the development of patient capital.

## References

- [1] Chu, P. and Zhang, R. (2025) *Research on the Impact of Patient Capital on Enterprise Resilience*. *Modern Economic Research*, (08), 80-94.
- [2] Liu, X. and Chen, S. Z. (2025) *Research on the Relationship between Patient Capital, Asset Liquidity and High-Quality Development of Enterprises*. *Price: Theory & Practice*, (05), 178-184.
- [3] Yao, J., Qi, Y. and Guo, B. (2022) *Corporate Social Responsibility, Debt Financing Cost and Enterprise Innovation*. *Scientific Reports*, 12, 21909.
- [4] Hu, H. F., Zhang, Y. and Wang, A. P. (2025) *New Research Progress on the Patient Capital*. *Economic Perspectives*, (07), 192-208.
- [5] Lin, Y. F. and Wang, Y. (2017) *New Structural Economics: Treating 'Patient Capital' as a Comparative Advantage*. *Development Finance Research*, 11(01), 3-15.
- [6] Ran, L. (2025) *An Exploration of Patient Capital on Enterprise Digital Transformation*. *Accounting and Corporate Management*, 7(3), 80-83.
- [7] Wu, M. J., Zhang, P. and Zhao, Z. Y. (2022) *The Impact of Patient Capital and Innovation Investment on Corporate Performance: Based on the Data of Small and Medium-sized Board Listed Companies*. *Scientific Decision Making*, (09), 55-72.
- [8] Aghion, P., Reenen, V. J. and Zingales, L. (2013) *Innovation and Institutional Ownership*. *The American Economic Review*, 103(1), 277-304.
- [9] Liu, B. and Lu, J. R. (2024) *Does the Quantity of ESG Information Disclosure Reduce the Cost of Corporate Debt Financing?*. *Studies of International Finance*, (06), 87-96.
- [10] Xu, Q., Ruan, C., Jiang, C. and Li, L. (2025) *The Spillover Effect of Core Enterprises' ESG Performance on Node Enterprises' Debt Financing Costs*. *Global Finance Journal*, 68, 101208.
- [11] Wang, C. H. (2024) *Analysis of the Impact of Accounting Conservatism on Corporate Debt Financing Cost*. *Vitality*, 42(05), 7-9.
- [12] Guan, Z. Z. and Wang, Y. W. (2023) *The Impact of Corporate Social Responsibility on Debt Financing Cost-A Mechanism Effect Based on Default Risk*. *Price: Theory & Practice*, (08), 135-138+209.
- [13] Li, J. J. (2022) *Internal Control Quality, Financing Environment, and Debt Financing Cost*. *Communication of Finance and Accounting*, (14), 74-77.
- [14] Tang, L., Tong, M. X. and Yang, G. Y. (2026) *Impact of Patient Capital Investment on Supply Chain Resilience*. *East China Economic Management*, 40(01), 50-62.
- [15] Yan, A. Q. (2025) *Research on the Influence Mechanism and Pathways of Patient Capital on Corporate Long-Term Value Creation*. *Friends of Accounting*, (22), 76-84.
- [16] Shi, Y., Zheng, S., Xiao, P., Zhen, H. and Wu, T. (2024) *ESG Performance and Cost of Debt*. *China Journal of Accounting Research*, 17(4), 100390.
- [17] Qiu, R., Tian, Z., Mai, J. and Ding, R. (2024) *Patient Capital and the Improvement of Enterprise Total Factor Productivity*. *Securities Market Herald*, (12), 3-12.