Corporate Financialization and Corporate Financing Constraints in Non-Financial Companies of Listed Companies in China based on Experimental and Mathematical Statistics Analysis

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Keywords: Corporate Financialization, Financing Constraints, State Ownership.

Abstract: The improvement of corporate financialization is of great significance for enterprises to ease financing constraints. Based on the non-financial industry data of China's listed companies from 2007 to 2020, this paper explores the impact of corporate financialization on corporate financing constraints based on the moderating effect of state ownership. In order to test the impact of corporate financialization on financing constraints, this paper adopts the fixed effect model and controls the corresponding variables. In the robustness test, the lag variable and the Change model are adopted, and the results remain unchanged, indicating that the improvement of corporate financialization can alleviate the financing constraints faced by enterprises. The empirical study finds that the improvement of corporate financialization can relieve the financing constraints faced by enterprises and improve the financing ability of enterprises. In the sample of non-state-owned enterprises, the effect of corporate financialization on the alleviation of financing constraints is more obvious.

1 INTRODUCTION

Since the 1980s, market demand has been declining, and overcapacity in the real economy has led to a decline in the return on investment of real enterprises, which have invested more resources into the high-yield financial industry to obtain returns. This phenomenon of financialization has been noted by scholars. Some scholars define financialization and believe that it is an accumulation mode, and profits are mainly obtained through financial channels rather than through trade and commodity production (Krippner, 2005).

Keynes put forward the "precautionary saving theory" in 1936, believing that the saving behavior is to prevent the shortage of cash flow from causing adverse effects on enterprises. Scholars have found that financial assets are characterized by short term and high liquidity, and enterprises can change cash flow and capital structure by trading financial assets (Stulz, 1996). Enterprises can invest idle funds in the financial industry with higher yields, and when they need funds, they can sell the financial products invested in the financial industry in time, which can quickly form more cash flow, thus alleviating the financing difficulties faced by enterprises.

The report of the World Bank shows that 75% of non-financial enterprises in China face financing constraints, the highest proportion among the 80 countries surveyed. Therefore, it is extremely urgent to solve the difficulty of enterprise financing constraint.

While corporate financialization and financing constraints have become the focus of academic attention, the linkage between the two has been ignored. Will the improvement of corporate financialization alleviate the financing constraints faced by enterprises? Therefore, this paper will mainly discuss the relationship between corporate financialization and financing constraints. Compared with the existing studies, the possible contribution of this paper lies in that few papers discuss the impact of corporate financialization on financing constraints. This paper will also divide enterprises advice according to the nature of corporate property rights, and discuss the different properties of property rights and the difference between the improvement of financialization and the alleviation of corporate financing constraints.

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2 MATERIALS AND METHODS

2.1 Corporate Financialization

In the research on the causes of enterprise financialization, there are mainly two viewpoints: "reservoir" theory and "investment substitution" theory. According to the "reservoir" theory, when enterprises invest idle funds into the financial industry, they can use financial derivatives to hedge trading risks and prevent the risk of capital chain breakage. In the face of future investment opportunities, they can withdraw large amounts of funds in time to reduce investment underinvestment (Stulz, 1996; Bessembinder, 1991). Due to the strong liquidity ability and low realization cost of financial products, financial products held by enterprises can play the role of funds, and can quickly replenish funds when enterprises need funds to achieve the "reservoir" effect.

"Alternative investment" phenomenon appeared in the 1970s last century, America's economy contracted phenomenon, most of the entity enterprise losses, industrial investment yields down, enterprise in order to get more rewards, maximizing benefits, meet the requirement of maximize shareholder returns, and had to put resources into other areas (Stockhammer, 2006).

2.2 Financing Constraints

According to the definition of relevant scholars, financing constraint is due to the imperfect market mechanism and other problems, which leads to the higher external financing cost than the internal financing cost (Fazzari, 1988). More and more scholars have noticed that enterprises are faced with different degree of financing constraints and the problems brought by financing constraints have become a research hotspot. Some scholars have found that enterprises facing financing constraints will reduce innovation ability, hinder the process of upgrading of global value chain, restrict the participation of enterprises in export, and affect the investment and growth of great business (Schumpeter, 2003; Gorodnichenko, 2013; Stein, 2003; Sun Lingyan and Cui Xijun, 2012).

Some scholars have found that political association can alleviate the financing constraints of Chinese enterprises, and equity incentive can also reduce the negative impact of financing constraints (Yan Ruosen and Jiang Xiao, 2019; He Xiaoxing and Ye Zhan, 2017). However, the existing literature has not been able to provide sufficient evidence to support the question of whether corporate financialization can affect the financing constraints of enterprises.

2.3 Research Hypothesis

2.3.1 Corporate Financialization and Corporate Financing Constraints

In the process of production and management, enterprises face the biggest problem is the problem of capital chain fracture. How to obtain a large amount of low-cost capital when the enterprise is in urgent need of capital is the key factor for the development and growth of enterprises. Some scholars have found that the flexibility of financial assets, compared with production investment, can enable enterprises to gain profits quickly in the short term and expand the cash flow of enterprises (Ran and Duchin, 2010). Enterprises will invest their idle funds in the financial industry to improve their financialization and gain more profits, avoid capital chain fracture caused by insufficient operating profit, avoid risks and increase their ability to respond to emergencies (Gehringer, 2013; Easley D, O'Hara M, 2004). The main motivation of the improvement of corporate financialization is the "reservoir" effect, which can effectively alleviate the financing constraints of enterprises. Based on this, hypothesis 1 is proposed in this paper:

H1: The improvement of enterprise financialization can effectively alleviate the problem of enterprise financing constraint;

2.3.2 Adjust Action of Property Right Nature

Debt financing is the main financing channel in China. Due to policy, environment and other factors, state-owned banks play a dominant role in the financial system, and financial resources also flow more to state-owned enterprises. Non-state-owned enterprises are faced with more serious letter of credit policy in the process of applying for loans (Easley and O'Hara, 2004; Li Jian and Chen Chuanming, 2013). It is difficult for non-state-owned enterprises to obtain loans from financial institutions. In order to alleviate the problem of financing constraints, they will invest part of their funds in the financial industry, because the "reservoir" effect of financialization is stronger than the crowding out effect, which will broaden the financing channels of enterprises and improve their financing capacity (Wu and Zhang 2021). Based on this, hypothesis 2 is proposed in this paper:

Table 1: Definition and description of major variables.

Variable types	Variable name	Variable name
Explained variable	Financing constraints	SA
Explanatory variables	Corporate financialization	Fin
Control variables	Enterprise scale	Size
	Debt ratio	Lev
	Return on assets	ROA
	Return on equity	ROE
	Cash holdings	CASH
	Investment opportunities	TOBINQ
	Growth rate of sales revenue	Growth
	Property rights	SOE
	Nature of the profit and loss	LOSS
	Largest shareholder	First
	Board Size	Board
	Proportion of Independent Directors	ID
	Separation rate of two weights	SEP

H2: Compared with state-owned enterprises, in non-state-owned enterprises, the improvement of corporate financialization can better alleviate the financing constraints of enterprises.

3 EMPIRICAL DESIGN

3.1 Sample and Data

This paper selects the samples of non-financial listed companies from 2007 to 2020 for research. The sample was processed as follows :(1) The ST class and ST* class enterprise data were removed; (2) Delete abnormal data and disclose incomplete data; (3) In order to eliminate the influence of extreme values and outliers, the upper and lower ends of all variables were processed by 1%.

3.2 Model Construction and Index Selection

To explore the impact of enterprise financialization and financing constraints, the following models are constructed:

$$SA_{i,t} = \alpha_0 + \alpha_1 Fin_{i,t} + \sum \gamma Controls_{i,t} + \sum \eta YEAR + \varepsilon_{i,t} (1)$$

Firstly, the degree of financing constraint (SA). Referring to the research method of Hadlock and Pierce, this paper adopts SA index as the proxy variable to measure the degree of financing constraint, and the calculation formula SA=-0.737Size+0.043 size^2-0.040 Age.

Second, corporate financialization (FIN). This paper adopts the approach of accounting statement reconstruction, and uses the ratio of ending financial assets to the company's ending total assets to measure the level of enterprise financialization.

Third, Controls. The definitions and explanations of the main variables in this paper are shown in Table 1

4 EMPIRICAL ANALYSIS

4.1 Descriptive Statistics

Table 2 is descriptive statistics of all variables. As can be seen from the results in the table, the mean value of financing constraint (SA) is -3.323. All enterprises are faced with financing constraint of different severity. The average value of corporate financialization (FIN) is 6.62%, which indicates that the financialization degree of Chinese enterprises is not high and is still in the initial stage. In the selected enterprise data, the average value of property right nature (SOE) is 0.341, indicating that 34.1% of the enterprise data are state-owned enterprises.

4.2 Correlation Analysis

Table 3 Pearson phase relation between the main variables is the content of the table, we can see from the table enterprise financing constraints (Sa) and financialization (Fin), the correlation coefficient is positive, and significant results are good, and can preliminary validate assumptions, shows that the enterprise financialization increase enterprise's cash flow, relieve companies face financing constraints.

Table 2: Descriptive Statistical Table.

DESCRIPTIVE	(1)	(2)	(3)	(4)	(5)
VARIABLES	N	mean	sd	min	max
Sa	14,422	-3.323	0.164	-3.690	-2.791
Fin	14,422	0.0662	0.0970	0	0.516
Size	14,422	22.19	1.287	19.79	26.06
Lev	14,422	0.433	0.203	0.0546	0.884
Roa	14,422	0.0450	0.0647	-0.232	0.232
Roe	14,422	0.0743	0.128	-0.591	0.394
Cash	13,975	0.179	0.126	0.0137	0.628
Tobinq	14,422	2.094	1.888	0.149	10.61
Growth	14,422	0.941	2.734	0	20.45
Loss	14,422	0.0919	0.289	0	1
First	14,422	33.69	14.20	9.780	72.63
Board	14,422	2.125	0.194	1.609	2.639
Id	14,422	0.375	0.0526	0.333	0.571
Sep	14,422	4.903	7.547	0	28.81
soe	14,422	0.341	0.474	0	1

Table 3: Table of correlation numbers.

VARIABLES	Sa	Fin	Size	Lev	Roa	Tobinq	soe
Sa	1						
Fin	0.037***	1					
Size	0.265***	0.00100	1				
Lev	0.016*	0.030***	0.490***	1			
Roa	-0.075***	0.00800	-0.037***	-0.371***	1		
Tobinq	-0.096***	0.00600	-0.478***	-0.457***	0.345***	1	
soe	-0.143***	0.065***	0.0120	0.081***	0.024***	-0.021**	1

Table 4: Hypothesis 1 Test results.

Test	(1)	(2)	(3)	(4)
VARIABLES	Separate regression	Full sample regression	Separate regression	Full sample regression
Fin	0.062***	0.058***	0.305***	0.142***
	(4.42)	(4.40)	(7.33)	(4.35)
Controls	NO	YES	NO	YSE
Observations	14,422	13,975	14,422	13,975
R-squared	0.001	0.151	0.020	0.505
Company FE	NO	NO	YES	YES
Year FE	NO	NO	YES	YES
R^2 a	0.00129	0.150	0.0200	0.504

Note: *, ** and *** represent the statistical significance level of 10%, 5% and 1%, respectively. T value in parentheses, same as below.

4.3 Regression Analysis

4.3.1 Corporate Financing Constraint Is Related to Corporate Financialization:

In view of Hypothesis 1 proposed above, this paper tests the impact of firm financialization (FIN) on firm financing constraints (SA) according to Model (1). The empirical results are shown in Table 4. Among the above four regression results, the relationship between enterprise financialization (FIN) and enterprise financing constraint (SA) is all positively correlated, which are significant at the significance level of 1%. It shows that the fixed

effect model is correct, verifies Hypothesis 1, and indicates that the improvement of firm financialization (FIN) can alleviate the financing constraints (SA) faced by firms.

4.3.2 Adjust Action of Property Rights:

In the sample grouping of private enterprises, before and after adding the control variables, there is a positive correlation between financialization (FIN) and financing constraints (SA), which is significant at the significance level of 1%, indicating that in private enterprises, the improvement of financialization can alleviate the financing constraints faced by enterprises. In the sample group of state-owned enterprises, although the improvement of enterprise financialization (FIN) can also alleviate the financing constraint (SA) of enterprises, the significance level is low and the effect is not obvious. Hypothesis 2 is verified, which indicates that in private enterprises, the regulating effect of property right nature is more significant.

4.3.3 Robustness Test

Change Model and Perform Lag Tests on Variables:

To further eliminate the endogeneity problem caused by the omitted variables, this paper also uses the Change Model to test again the impact of the financing constraints of the financialization of enterprises. Regression results of Change model are shown in column (1) of Table 6. Both in the full sample regression and in the sub-sample group test, the conclusions are consistent with the above. In conclusion, a variety of endogenetic tests have shown that the conclusion of this paper is still valid after overcoming problems such as missing variables

5 CONCLUSION

5.1 The Research Conclusion

The results show that :(1) the improvement of corporate financialization can effectively alleviate the financing constraints of enterprises. (2) Among non-state-owned enterprises, the improvement of corporate financialization has a more obvious effect on alleviating financing constraints.

Table 5: Hypothesis 2 Test results.

Test	(1)	(2)	(3)	(4)
VARIABLES	SOE=0	SOE=0	SOE=1	SOE=1
Fin	0.382*** (9.99)	0.173*** (5.73)	0.109 (1.07)	0.096 (1.61)
Controls	NO	YES	NO	YES
Observations	9,509	9,317	4,913	4,658
R-squared	0.048	0.488	0.001	0.552
Company FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
R^2_a	0.0482	0.487	0.00116	0.551

Table 6: Robustness test results.

Test	Change Model			The variables are delayed by two periods		
VARIABLES	All samples	SOE=0	SOE=1	All samples	SOE=0	SOE=1
D.Fin	0.035** (2.02)	0.046** (2.53)	-0.029 (-0.96)			
L2.Fin				0.236*** (4.24)	0.185*** (4.72)	0.085 (1.17)
Observations	11,506	7,248	3,879	9,539	5,891	3,473
Company FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Controls	NO	YES	YES	NO	YES	YES
R^2_a	0.00329	0.120	0.0459	0.0100	0.445	0.506

5.2 Policy Suggestions

5.2.1 Strengthen the Screening and Supervision of the Financialization of Enterprises

The state should encourage enterprises to moderately financialize rather than excessively financialize, and avoid the hollowing out of the national real industry and excessive prosperity of the virtual economy, resulting in serious economic bubbles.

5.2.2 Broaden Financing Channels

Non-state-owned enterprises are faced with many difficulties when borrowing from banks. Therefore, enterprises have to invest resources in the financial industry to expand financing channels.

REFERENCES

Bessembinder, Hendrik. "Forward contracts and firm value: Investment incentive and contracting effects." Journal of Financial and quantitative Analysis (1991): 519-532.

Easley D, O'Hara M. Information and the Cost of Capital[J]. Journal of Finance, 2004, 59(4):1553-1583.

FAZZARI S, HUBBARD M, PETERSEN R G, et al. Financing corporate constraints investment[J]. Brookings Papers on Economic Activity, 1988, 1:141-206.

Gorodnichenko Y, Schnitzer M. Financial constraints and innovation: Why poor countries don't catch up[J]. Journal of the European Economic association, 2013, 11(5): 1115-1152.

Gehringer A. Growth, productivity and capital accumulation: The effects of financial liberalization in the case of European integration[J]. International Review of Economics & Finance, 2013, 25(1): 291-309.

He Xiaoxing, Ye Zhan. Do Equity Incentives Affect Firms' Financial Constraints?——Empirical Evidence from Public Firms in China[J]. Business Management Journal,, 2017,39(01):84-99.

Hadlock C J, Pierce J R. New Evidence on Measuring Financial Constraints: Moving Beyond the KZ Index[J]. Review of Financial Studies, 2010, 23(5): 1909-1940.

Krippner G R. The financialization of the American economy[J]. Socio-Economic Review, 2005(2): 173-208.

Li Jian, Chen Chuanming. Entrepreneurs' political affiliation, ownership and corporate debt maturity structure: An empirical study based on the background of transition economy system[J]. Journal of Financial Reserch,2013(03):157-169.

RAN, DUCHIN. Cash Holdings and Corporate Diversification[J]. Journal of Finance, 2010.

Stulz R M. Rethinking Risk Management[J]. Journal of Applied Corporate Finance, 1996, 9(3):8-25.

Song Jun, Lu Yang. U-shape Relationship between Non-currency Financial Assets and Operating Profit: Evidence from Financialization of Chinese Listed Non-financial Corporates[J]. Journal of Financial Research,2015(06):111-127.

Stockhammer E. Financialisation and the slowdown of accumulation[J]. Working Papers, 2000, 28(5): 719-741.

Stockhammer E. Shareholder value orientation and the investment-profit puzzle[J]. JPKE: Journal of Post Keynesian Economics, 2006, 28(2): p.193-215.

Schumpeter J, Backhaus U. The theory of economic development[M]//Joseph Alois Schumpeter. Springer, Boston, MA, 2003: 61-116.

Stein J C. Agency, information and corporate investment[J]. Handbook of the Economics of Finance, 2003, 1: 111-165.

Sun Lingyan, Cui Xijun. How Does FDI Affect Private Firms' Financing Constraints?——Firm-Level Evidence from China [J]. South China Journal of Economics, 2012(01):47-57.

Tornell, Aaron. "Real vs. financial investment can Tobin taxes eliminate the irreversibility distortion?." Journal of Development Economics 32.2 (1990): 419-444.

Wu Weiwei, Zhang Tianyi. The Asymmetric Influence of Non-R&D Subsidies and R&D Subsidies on Innovation Output of New Ventures [J]. Management World,2021,37(03):137-160+10.

Yan Ruosen, Jiang Xiao. The Multiple Relationship Model and Empirical Research of Institutional Environment, Political Connections, Financing Constraints and R&D Investment[J]. Chinese Journal of Management,2019,16(01):72-84.