The Influence of Financial Development on Financing Constraint of Listed Companies on SME Board

Jianzhong Lei*, Fen Zhang

School of Mathematics and Finance, Hunan University of Humanities, Science and Technology, Loudi 417000, China
3082316537@qq.com
*Corresponding author

Abstract: Based on the sample data of listed companies on China's SME Board, this paper empirically tests whether there is financing constraint on listed companies on China's SME Board by using the financing constraint model proposed by Almeida et al. (2004), and further analyzes the impact of financial development on listed companies' financing constraint.The empirical results show that listed companies in China are facing different degrees of financing constraints, and the progress of financial development level can alleviate the financing constraints of listed companies. Finally, relevant policy suggestions are put forward accordingly.

Keywords: Financial development, Financing constraint, Listed companies of SME Board, Cash - cash flow sensitivity model

1. Introduction

Financial development can promote long-term economic growth, and the gap of financial development level among different regions in China leads to the gap of economic growth to a certain extent (Zhou Li, 2002).As the main body of the market, enterprises play a huge role in promoting economic growth and increasing employment opportunities, but they also face different degrees of financing constraints.Due to the imperfection of China's financial market, smes often encounter "credit rationing" in the process of development, which leads to financing difficulties and expensive financing.Therefore, based on the current level of financial development in China, this paper analyzes the influence of financial development on financing constraints of smes by means of the financing constraint model proposed by Almeida et al. (2004) using sample data of listed companies on the SMALL and medium-sized board, and empirically analyzes the relationship between financial development and financing constraints of enterprises. On the one hand, it provides microcosmic evidence for financial development to promote economic growth from the perspective of relieving corporate financing constraints, and at the same time, it also provides policy suggestions for optimal allocation of financial resources.

Corporate financing constraint is a hot research topic in corporate theory, and alleviating corporate financing constraint is always a subject promoted by theoretical researchers and policy makers.Since Fazzari et al. (1987) proposed that agency problem and information asymmetry are the two main reasons for financing constraints of enterprises, domestic and foreign scholars have studied different markets from the following three aspects.Gelos and Wemer (2002) studied corporate financing constraints based on company size, Kaplan and Zingales(1997) constructed k-Z index to measure financing constraints, and Almeida et al. (2004) constructed cash-flow sensitivity model based on corporate precautionary motivation.From the enterprise itself development and governance mechanism to examine the financing constraints, such as Jiang Fuxiu (2017) study found that due to the large shareholders have motivation and supervision ability, have multiple large shareholders of the company faced with lower levels of financing constraints, Sun Zheng etc. (2005) found that compared with private enterprises, state-owned enterprises to obtain long-term loans more easily.Third, the influence of external environment on financing constraints. Li Zengquan et al. (2008) found that enterprises in China's financially underdeveloped areas face more serious financing constraints. Lin Yifu (2002) proposed that developing small and medium-sized financial institutions is the fundamental way to solve the financing constraints of China's small and medium-sized enterprises.The empirical results of Sheng Jidan (2017) show that financial development can ease the financing constraints of smes, and the

development of financial intermediaries has a more obvious easing effect on the financing constraints of smes than the stock market. Liang Bang et al. (2018) found that the development of digital inclusive finance and Internet finance is conducive to improving the financing difficulties of smes.To sum up, along with our country reform and opening-up and the capital markets, financial development can effectively relieve our country enterprise financing constraints, especially to relieve expensive, small and medium-sized enterprise financing difficulties and financing, in turn, promote the development of our country economy the high quality, have important practical significance, is also the key points of this paper.

2. Variable and Model

2.1 Sample Selection and Data Source

This paper selects the financial data of small and medium-sized listed companies in Shenzhen from 2012 to 2018 as the research object. And the following screening :(1) select companies that have been listed for six years or more to ensure that they have a state of continuous operation; (2) delete the special treatment (ST/PT) and financial companies to ensure that the selected companies represent smes; (3) Delete companies whose liabilities are greater than their assets. The data came from the National Tai 'an Database, the National Bureau of Statistics and the Shenzhen Stock Exchange.

2.2 Variable Definition

The core explanatory variable of this paper is financial development level (FD), which is measured by the monetization rate, that is, the financial development level is equal to the ratio of the value of goods and services exchanged through money to the gross national product within a certain economic scope.The explained variable is the change in Cash holdings $\triangle$Cash.The control variables are enterprise growth, enterprise asset scale, enterprise capital expenditure, change of non-cash working capital and change of short-term loan.

Table 2.1: Definition and calculation formula of variables

Variable	Variant	Computing method
		Explained variable
$\triangle$Cash	Change in cash and its equivalents	$\triangle$Cash= Change in Cash and its equivalents/Total assets at the beginning of the period
		Explaining variable
CF	Net cash flow from operating activities	CF = Net cash flow from current operating activities/total assets at the beginning of the period
FD	Financial development measures	FD=M2(money supply)/GDP
		Control variable
Grow	Corporation growth	Increase rate of business revenue
Size	Enterprise asset scale	Size=The natural log of total assets at the end of the current period
Expend	firm capital expenditures	Expend =(Cash paid to construct fixed assets, intangible assets and other long-term assets - Cash recovered from disposal of fixed assets, intangible assets and other long-term assets)/ Total assets of the current period
$\triangle$NWC	Change in non-cash working capital	NWC =(current assets - current liabilities - monetary capital)/ Total assets of the current period
$\triangle$Sd	short-term borrowing changes	Sd= current liabilities/Total assets for the current period (Current assets = Current assets at the end - Current assets at the beginning)

2.3 Model

Almeida proposed that the positive correlation between changes in corporate cash holdings and cash flow is evidence of external financing constraints. Therefore, based on the cash-cash flow sensitivity model proposed by Almeida et al. (2004), this paper empirically tests whether Chinese smes have financing constraints, and the model (2.1) is as follows:

$$\triangle \text{Cash}_{it} = \alpha_0 + \alpha_1 \text{CF}_{it} + \alpha_2 \text{grow}_{it} + \alpha_3 \text{Size}_{it} + \alpha_4 \text{expend}_{it} + \alpha_5 \triangle \text{nwc}_{it} + \alpha_6 \triangle \text{sd}_{it} + \mu_i + \epsilon_{it} \qquad (2.1)$$

To further empirically test the impact of financial development on smes' financing constraints, financial development indicators are added to formula (2.1), and the interaction term between corporate cash flow indicators and financial development level indicators is added to reduce errors, and model (2.2) is obtained as follows:

$$\triangle \text{Cash}_{it} = \alpha_0 + \alpha_1 \text{CF}_{it} + \alpha_2 \text{grow}_{it} + \alpha_3 \text{Size}_{it} + \alpha_4 \text{expend}_{it} + \alpha_5 \triangle \text{nwc}_{it} + \alpha_6 \triangle \text{sd}_{it} + \alpha_7 \text{FD} * \text{CF}_{it} + \alpha_8 \text{FD} + \mu_i + \epsilon_{it} \qquad (2.2)$$

3.Empirical Result

3.1 Descriptive Statistics

As can be seen from the table describing variables, the size of small and medium-sized enterprises is not different from each other. However, as for the mean value of Cash Cash and Cash equivalents, 0.0127, the Cash holding of small and medium-sized enterprises is generally small, and the difference between the minimum value of -0.0237 and the maximum value of 0.0560 is still relatively large. The cash flow CF of small and medium-sized enterprises is generally about 0.0550, with little difference. In terms of the growth of small and medium-sized enterprises, the minimum value is 0.1419 and the maximum value is 1.7312, and the mean value of grow is 0.3581, indicating that small and medium-sized enterprises generally have good development potential. The fluctuation of financial development level during the period is small.

Table 3.1: Descriptive statistics of main variables

Variable	Mean value	Standard deviation	Minimum value	Maximum value	Sample size
Cash	0.0127	0.0295	-0.0237	0.0560	4277
CF	0.0550	0.0074	0.0434	0.0655	4277
FD	1.9718	0.1020	1.8087	2.0945	4277
Size	22.3336	0.3884	21.7400	22.9441	4277
Grow	0.3581	0.3608	0.1419	1.7312	4277
Sd	0.0700	0.0151	0.0458	0.0959	4277
NWC	0.1018	0.0149	0.0621	0.1321	4277
Expend	0.0046	0.0398	-0.0582	0.0935	4277

3.2 Correlation Test

According to the analysis in the following table, The correlations between explanatory variables are small, The correlation coefficients of Cash and its equivalents (Cash) and Cash flow (CF), non-cash working capital (NWC), enterprise capital expenditure (EXPend), enterprise growth (Grow) and enterprise asset size (SIZE) short-term loan (SD) of listed companies on the SMALL and medium-sized board are 0.4842 and -0.2090, respectively , 0.1542, 0.2435, 0.4888, 0.6136; The correlation coefficients between cash flow (CF) and change in non-cash working capital (NWC), enterprise capital expenditure (EXPend), enterprise growth (Grow) and change in short-term borrowing (SD) of enterprise asset size (SIZE) are 0.0574, -0.0128, -0.5137 and -0.2135, respectively , -0.0663, so the analysis results show that there is no significant correlation between variables.

Table 3.2: Correlation test

variable	cash	FD	CF	nwc	expend	grow	size	sd
Cash	1.0000							
FD	0.8637	1.0000						
CF	0.4842	0.1686	1.0000					
nwc	-0.2090	-0.4134	0.0574	1.0000				
expend	0.1542	0.1438	-0.0128	-0.6775	1.0000			
grow	0.2435	0.4321	-0.5137	-0.1321	-0.0023	1.0000		

size	0.4888	0.8459	-0.2135	-0.5474	0.1848	0.4914	1.0000	
sd	0.6136	0.4133	-0.0663	-0.0270	0.1600	0.5448	0.1162	1.0000

3.3 Empirical Result

According to the results of regression analysis, it can be seen that the cash flow coefficient of regression model (2.1) is positive 2.4648, indicating that under the significance level of 1%, Chinese smes listed on the board have different degrees of financing constraints. According to the cross term of cash flow and financial development indicator (FD) and cash flow (CF) is negative -1.4602, indicating that financial development has a certain easing effect on smes' financing constraints at the significant level of 5%.

Table 3.3: Regression results of each model

variable	Model (2.1)	Model (2.2)
CF	2.4648 *** (11.18)	4.0393 (0.54)
CF×FD		-1.4602** (2.47)
FD		0.3474 (-0.39)
Nwc	0.3144 ** (2.08)	0.2440 ** (2.48)
Expend	0.0345 (0.70)	0.0694* (1.97)
Grow	-0.0070 ** (-1.11)	-0.0066* (-1.82)
Size	0.0507 *** (10.28)	-0.0139 (-0.91)
sd	1.2106 *** (10.35)	0.5821 ** (3.18)

Note: ***, ** and * represent significant to the degree of 1%, 5% and 10% respectively, and the values in brackets are T values

4.Conclusion

It is a worldwide problem for small and medium-sized enterprises to face financing constraints. The existence of financing constraints will inevitably hinder the healthy development of enterprises. At present, China's economic development is in the stage of transformation and upgrading.Based on the sample data of listed companies on the Small and medium-sized board in Shenzhen, this paper uses the financing constraint model proposed by Almeida et al. (2004) to empirically test whether China's small and medium-sized enterprises have financing constraints, and analyzes the impact of financial development on the financing constraints of small and medium-sized enterprises. The results show that most listed smes in China have financing constraints, which are reflected in positive cash flow coefficient. However, financial development can alleviate the financing constraints of enterprises, specifically, the cross term coefficient of financial development and cash flow is negative.

Based on the above conclusions, the policy recommendations can be drawn as follows: continue to promote financial reform, fully open the capital market, broaden the financing channels of enterprises; Further deepen the reform of financial marketization, make the financial structure and financial system better adapt to the changing economic structure, optimize the efficiency of resource utilization; Vigorously develop small and medium-sized financial institutions, especially the use of big data and information technology to promote the digital transformation of banks, broaden the boundaries of financial services, so as to alleviate the development difficulties of small and medium-sized enterprises.

Acknowledgements

References

[1] Almeida H,Campello M , Weisbach M S.The Cash Flow Sensitivity of Cash[J]. The Journal of Finance, 2004, 59.

[2] Zhou Li, Wang Zi Ming. An empirical analysis of financial development and economic growth in China: 1978-2000 [J]. Financial Research, 2002, 000(010):1-13.

[3] Fazzari S , Hubbard R G , Petersen B C . Financing Constraints and Corporate Investment[J]. NBER Working Papers, 1987.

[4] Gaston R , Gelos, and, et al. Financial liberalization, credit constraints, and collateral: investment in the Mexican manufacturing sector[J]. Journal of Development Economics, 2002.

[5] Kaplan S N , Zingales L . Do Investment-Cash Flow Sensitivities Provide Useful Measures of Financing Constraints?[J]. Quarterly Journal of Economics, 1997, 112(1):169-215.

[6] Jiang Fuxiu. Multiple major Shareholders and corporate financing constraints: Empirical evidence based on text Analysis [J]. Management World, No.291(12):61-74.

[7] Sun Zheng, Liu Fengwei, Li Zengquan. Degree of marketization, Government intervention and corporate debt maturity structure: Empirical evidence from Chinese listed companies [J]. Economic Research Journal, 2005, 040(005):52-63.

[8] Li Zengquan, XIN Xiangang, YU Xuhui. Financial development, debt financing constraints and pyramid structure: Evidence from private enterprise groups [J]. Management World, 2008, 000(001):123-135.

[9] Lin Yifu, Li Yongjun. Economic Research Journal, 2001, 000(001):10-18.

[10] Sheng Jidan. Research on the Impact of Financial Development on financing constraints of smes [D]. Harbin University of Commerce,2017.

[11] Liang Bang, ZHANG Jianhua. China Science and Technology Forum,2018 (11) :94-105.