Our Empirical Study of bank loans accessibility influence factors for SMEs

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Abstract:
In this paper, we use the basic data of SMEs, released in 2007-2010 on News of China's listed companies, and randomly select samples of 100 small and medium enterprises. We also utilize the bank loans availability as a proxy variable to build a multiple linear regression model. In a word, our empirical research further affirms the existence of "the discrimination of scale" in the process of SMEs financing, verifies the severity of credit constraints in our small business, and shows that the bank lending policies using fixed assets as the collateral exacerbate the plight of small business financing.

Keywords: SME; bank loans; influencing factors

1. Introduction

Today, products, technology and knowledge of the innovation are increasingly accelerating. The growth of SME has become a more important issue than the efficiency of management for a modern enterprise. It is much more difficult to achieve than the management efficiency. And it is a primary factor influencing economic stability and sustainable development. The hardness of SME financing is common in the world, particularly in China. In recent years, the growth rate of SME in China has slowed down, and a great number of SMEs collapse every year. That has gravely constrained our economic and social development. Funds are the premise and foundation for investment and business activities. And how to raise them is significant for modern financial management. At present, 99% of our business is SMEs, which made great contributions to China's economic development. But the growth of SMEs has been plagued by financing for a long time. Financing has been the primary problem plagued the development of small and medium-sized enterprises, the main factors affecting the financing of SMEs and the reasons that lead to financing of SMEs has been the broad concerns of the domestic and foreign scholars.

Based on the existing literature comb, can be found, although had the research conclusion is no lack of redeeming feature, but due to the small and medium-sized enterprise's external debt financing channel mainly includes bank loan, and the literature lacked the bank loan accessibility research. Therefore, In this paper, based on the data of small and medium listed companies in China, we do the empirical study on the influencing factors on China's SME debt financing channels. On the one hand, we reveal what the bank will value on the SME financial statements when they grant loans to enterprises. On the other hand, we also research what SMEs will consider when they choose the financing channels. Finally, we hope to offer a clear basis for choice for the current SME financing in China.

2. Theoretical analysis and empirical hypothesis

Brau (2002) conducted a test of experience whether the agency costs of bank loans as an important factor, the results show small enterprises in the presence of agency costs will not increase its bank lending rates and mortgage requirements. This shows that the bank does not care about the agency cost problem, others such as bank-enterprise relationship, firm size, age, and its debt level is more concerned about factors when the banks loans to small businesses. Stiglitz & Weiss (1981) credit rationing theory to explain it is more difficult for SMEs to obtain credit. Whette's credit rationing model expands the theory of Stiglitz and others, he pointed out that for the risk-neutral borrower, collateral requirements may also be endogenous credit rationing mechanism. Bester further discusses the role of the collateral in credit rationing. He believes that the collateral can be isolated as the bank lending interest rates while the type of project risk screening mechanism, that is, banks can change the number of business-to-collateral sensitivity of the reaction to separate high-risk and low-risk lending.Greenbaum and Thakor (1993) think that when small businesses can not get loans from Banks formal commitment, or can not get an unconditional commitment to the loan contract, companies will seek alternative ways. One way is to resort to market mechanisms, through the purchase of long-term implicit contract with the commission, businesses and banks can establish a closer relationship. Nakamura (1993) proposed bank is willing to maintain relationships with existing corporate credit. Relationship is generally agreed that the benefits of credit based on the relationship are many, including increased credit supply, but whether it will reduce the cost of credit there are differences. Bergerand Udell (1995) suggested that a strong "relationship" can make small businesses get lower interest rates.

American scholar Berger & Udell (2002) on the western bank loans to enterprises technology is divided into four types: based on the financial statements type, asset-backed type, credit rating type, and relationship type[1].Relationship-based lending in which mainly

relies on "soft information" which is difficult to quantify, test and delivery, the information is usually not available from open market channels, but from long-term cooperation between banks and enterprises, or where the community bank and the enterprise business links between stakeholders in the built up. Relational lending can play an active role in improving the availability of small business loans, the loan interest rate at ease, mortgage collateral requirements [2]. As another way of external financing, commercial credit, whether in developed or developing countries, is one of the most important means of financing of SMEs. Commercial credit interest rates are generally much higher than bank loans, which reflects a high risk business credit, but also reflects the supplier has the credit advantages when providing commercial credit to the buyer. The major financing channels for SMEs are obtaining loans from banks. Because of the short-term borrowings and long-term SME loans mostly come from banks, short-term borrowings and long-term loans all treat as bank loans. In fact, it is relatively close to use short-term borrowings and long-term loans to measure the availability of loans and lending capacity of SMEs, but it is not optimal. In this paper the payment of SME include accounts payable、notes payable、deposit account，which is commercial credit of SME [3].

If the enterprise is on a smaller scale, enterprise information transparency is low, the bank and the enterprise the information asymmetry problem is larger, financial institutions loan decision cost is bigger, the bigger the cost after loan supervision. Domestic scholars of empirical studies support the correlation conclusion that the enterprise scale and its leverage significant are positive. Based on this, this study proposes hypothesis 1: availability of bank loans positively correlated with the scale of the enterprise.

Profit is the safeguard of the enterprise debt service and credit, profitability is an important aspect of a measure of credit. With strong corporate profitability and solid financial foundation, the ability of enterprise external financing ability and pay off debts is stronger, the likelihood of financial crises is also smaller. Based on this, this study proposes hypothesis 2: availability of bank loans positively correlated with the profitability.

The higher enterprise's total asset turnover shows the stronger ability of the assets of the operation. Sales income is high, capital cycle recovery can be fast, and it shows that the firm's borrowing ability is strong. Based on this, this study proposes hypothesis 3: availability of bank loans positively correlated with the operational capacity.

For creditors, the company solvency deficiencies may cause them to not be promptly and fully to recover the debt principal and interest, so they hope enterprise has strong solvency as far as possible. Stronger solvency of the enterprise may obtain more debt financing. Based on this, this study proposes hypothesis 4: availability of bank loans positively correlated with the solvency.

In general, the greater the collateral values of assets, the stronger the protection to liabilities to be repaid. The numbers of loans that financial institutions approved depend on the mortgage assets of enterprise, especially for the real estate mortgage as the most important condition [4].Based on this, this study proposes Hypothesis 5: availability of bank loans positively correlated with the asset tangibility.

Relationship lending is based on the bank's in-depth understanding of business, especially, it arises when banks and multi-party contacts and exchanges between enterprises and master the "soft" information. Relationship can compensate for SME lending practices because of their financial systems deficiencies, lack of transparency of information to reduce the adverse effects. Financial institutions are often not ready to make loans, if the business establishment period is short, lack the credibility of the records, financial reports and related information system is not perfect. Because of the enterprise's balance sheet can not get data services provided by banks, also can not get the opening time, so here use the management of the enterprise years instead of. Rajan (1994), Cole (2004) has established that the enterprise will have on its bank loans had a significant impact. Based on this, this study proposes hypothesis 6: availability of bank loans positively correlated with the years of operation.

3. the study design and sample selection

3.1. Variable Design

1) Dependent variable: availability of bank loan. As the special nature of each enterprise, the following variables were adjusted in this paper: set to availability of bank loans. In order to make the model fitting better, we use standardized data (which is a bank loan divided by total assets).

2) Independent variables：

a) Scale (SIZE). In this paper, it uses the logarithm of total assets to represent the scale of business, that is, SIZE = log (total assets).

b) Profitability (PROF). In this paper, ROE refer to corporate profitability.

c) Solvency (REPA). In this paper, acid test ratio refers to the solvency of enterprises.

d) Operational capacity (MACA). This article uses the total asset turnover refers to enterprises' operating ability.

e) Asset tangibility (ASST). In this paper, the ratio fixed assets to total assets refers to the tangible assets.

f) Business years (AGE). In this paper, the number of years with the company set up refers to proxy variable.

g) Business credit (CLCT). In this paper, standardized payables which include accounts payable, notes payable and receipts in advance refers to a proxy variable.

This part of the quantitative analysis, on the one hand is to reveal the banks when granting loans to enterprises, small and medium enterprises will be valued on the financial statements of the factors, the other is to examine financing channels for SMEs to make decisions, what factors associated with its own associated. In this paper, availability of bank loans as the dependent variable, with the above seven indicators

as independent variables, build multivariate linear regression model.

3.2. Test the model design

Based on the above hypothesis and the choice of variables, this paper, we initially established the basic multiple linear regression model:

$$LOAN = \beta_0 + \beta_1 \times SIZE + \beta_2 \times PROF + \beta_3 \times REPA + \beta_4 \times MACA$$
$$+ \beta_5 \times ASST + \beta_6 \times AGE + \beta_7 \times CLCT + \mu \quad (1)$$

Where: In this paper we use the availability of bank loans (LOAN) to measure; β_0, β_1, β_2 ... β_7 for the regression coefficient, μ is the random disturbance term, in line with the theory of multiple linear regression for the random disturbance of several basic assumptions .

3.3. The sample selection and data sources

In this paper, the companies listed on the small business board before 31 December 2010 regard as the research overall, it randomly drawn from a small board sample of 100 enterprises, which involving biological, pharmaceutical, clothing, food and other industries. These companies use the 2007-2010 years of panel data for empirical research (not included in this sample ST firms and banks). Data from: small plates - China's Listed Companies Information Network; China Securities Regulatory Network.

4. The regression model results

4.1. The descriptive statistics of each agency variables

On the scale of operation, profitability, solvency, operations, asset tangibility, business number of years, bank loans, commercial credit and other variables of descriptive statistics.

TABLE 1 DESCRIPTIVE STATISTICS OF VARIABLES AGENT

	Mean	Std. Deviation	N
Scale of operation	9.1144	0.3392	400
Profitability	0.1085	0.0891	400
Solvency	2.7684	6.0900	400
Operational capacity	0.8194	0.5856	400
Asset tangibility	0.2384	0.1520	400
Years of operation	8.6800	3.3920	400
Bank loans	0.1615	0.1520	400
Commercial credit	0.1758	0.1245	400

4.2. Multicollinearity test and stationarity test

In measurement model, because the explanatory variable multicollinearity often leads to part of the variables can't through the test of significance, we use correlation coefficient matrix for the interpretation of the relationship between independent variables for inspection. The results show that each variable between the related degree is low, it can be argued that does not exist obvious multicollinearity.

In order to ensure the accuracy of the regression results, we use LLC, IPS test for variable stationarity test. The inspection result showed that the variables are smooth under the 5% significant level, it suggest that all variables are first order single whole sequence and have the long-term stable equilibrium relationship.

4.3. Regression analysis

TABLE 2 MODEL SUMMARY TABLE

R		0.507
R Square		0.258
Adjusted R Square		0.226
Std. Error of the Estimate		0.1337
Change Statistics	R Square Change	0.258
	F Change	8.281
	Sig. F Change	0.000

a.predictor variable: (Constant), Years of operation, Profitability, Solvency, Operational capacity, Asset tangibility, Scale of operation, Commercial credit

TABLE 3 ANALYSIS OF VARIANCE TABLE

	Regression	Residual	Total
Sum of Squares	1.184	3.414	4.598
df	6	192	198
Mean Square	0.1973	0.0178	
F	8.281		
Sig.	0.000		

TABLE 4 REGRESSION COEFFICIENTS IN TABLE

	Beta	t	Sig.
(Constant)		-2.043	0.042
Years of operation	0.181	2.595	0.010
Profitability	-0.147	-2.264	0.025
Solvency,	0.05	1.615	0.000
Operational capacity	-0.086	-1.274	0.204
Asset tangibility	0.264	3.824	0.000
Scale of operation	-0.004	-0.065	0.948
Commercial credit	-0.105	-1.361	0.075

Model tests and analysis

In the above regression model, adjusted R Square is 0.226, indicating that the scale of operation, profitability, solvency and other factors in 22.6% of the sample to explain the company's bank loan credit availability. F is 8.281, Sig. is 0.000. The regression results achieved significance level and have the statistical significance. In the model, the scale of operation, profitability, solvency, asset tangibility have passed the statistical test.

The regression results show that the scale of operations, asset tangibility, and Commercial credit are the main factors. Analysis is as follows:

1) The scale of operation and availability of bank loans have a significant positive correlation relationship, this is consistent with our theory assumes. Usually, from the perspective of suppliers of funds, larger size of business has higher credit compared with the relatively small size one. Because lenders believe that business development and growth is a gradual process, enterprises in the development process to accumulate experience and continue to exercise capacity. The number of fixed assets has been rising and the position on the market became more stable, it has the greater

ability to resist risks. Therefore, the banks are willing to credit to large businesses.

2) Liquidity and availability of bank loans have a significant relationship, which is consistent with our theoretical assumptions. This shows that the solvency of the banking business to make loans to the SMEs is an important consideration for decision-making. Profitability and operational capabilities and availability of bank loans have not significant relationship, it suggests that corporate profitability and operational capabilities of the SME Bank is one of the considerations to make lending decisions, but compared with the solvency of banks, they are not important.

3) Tangible assets and bank loan availability have a significant positive correlation, this is consistent with our theory assumes. The greater ratio of fixed assets to total assets, the easier get support from bank, availability of bank loan depends on the collateral provided.

4) Years of operation did not pass the significance test, which is inconsistent with our theoretical assumptions. Bank credit critically depends on the feasibility of firm size, tangible assets and other hard constraints, which may be due to domestic SMEs and the banks have not yet established a good working relationship. This shows that China's banking slowly with emphasis on long-term relationship of SMEs operating conditions for SMEs to obtain "soft information" in order to alleviate the root causes of credit rationing for SMEs-a serious asymmetric information problems.

5) Commercial credit and availability of bank loan is negatively correlated, but showed they have not significant relationship. There are serious information asymmetries between SMEs and banks, it is difficult to obtain loan approval, to a certain extent payable in the form of commercial credit as an effective alternative to bank lending.

5. Findings and recommendations

5.1. The conclusion of the study

1) Business size and availability of bank loans have a significant correlation, which shows the same direction. This empirical research further affirms the existence of "the discrimination of scale" in the process of SMEs financing. The main reasons for our SME credit constraints and financing difficulties are the absence of the social credit system and the serious block of commercial credit system.

2) Bank loans and commercial credit which are the main indirect financing channels for SMEs have a significant negative correlation. This shows that SMEs and banks has serious information asymmetry phenomenon. SMEs obtain loans from banking institution is difficult. Commercial credit as a form of payable is an effective alternative to bank lending. It also confirmed that SMEs credit constraints are serious.

3) Tangible assets significantly affect availability of bank loans of SMEs. The greater the proportions of fixed assets, the more easily obtain bank loans. The bank lending policies of fixed assets as collateral to

guarantee exacerbated the plight of SMEs business financing.

5.2. The proposed

1) We need to construct a reasonable credit system. At present, the public credit of the PBC is the mainly system, the number of private credit is little, and there is no effective competition. PBC system does not generally provide investors with a wide range of information support services, nor a credit rating of SMEs. Therefore, we should further improve the public credit system and actively build the private credit system. What's more, we should strengthen the communication between the public and private credit system so that reduce the information asymmetry and ease financing problems.

2) We need to perfect assurance diversification mechanism and innovation counter guarantee mode. Guarantee is the market mechanism added rather than substitute. Cooperative Banks is direct beneficiaries due to the Guarantee, so cooperative banks should bear the part of the risk. We should develop re-guarantee, improve SME credit re-guarantee system and innovate counter-guarantee mode. According to the practical situation, we can consider equipment, inventory, and accounts receivable and sales contract as anti-collateral. To improve the SME credit guarantee institutions that are familiar with high-tech and financial knowledge in order to provide credit guarantees to SMEs. It can improve the enthusiasm to SMEs through share the risks of banks.

3) The banks and SMEs should maintain long-term stability of the relationship. As for SMEs, firstly, they need to enhance credit awareness and establish a good repayment reputation. Secondly, they should improve capital efficiency and adhere to the credit criteria—" Have borrow have also, borrow it is not difficult". Thirdly, they should take the initiative to disclose the information to the bank and establish a good corporate reputation and win trust and support of banks. At the same time, commercial banks should change their concepts and establish mutually beneficial cooperation relationship with corporate. Create long-term stable relationship between banks and SMEs is one of the ways to improve the availability of bank loans. The bank and the enterprise should establish mutually beneficial relationship and long-term stable relationship of common development.

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