

Loan Conditions and Bank Risk Exposure

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Abstract—This paper investigates the loan conditions and bank risk exposure for the risk valuation factors of loans within the commercial bank industry. We use the listed companies in the Taiwan Economic News, sort out the financial indicators in 2007-2018, and empirically explores the impact of enterprises on bank borrowing. We find that the bank's credit funds are associated with bank-specific characteristics such as size, a growth rate of the asset, growth rate of income, net profit, the current ratio, and EPS. Empirical results provide positive significant evidence from the size and current ratio, indicating the impact on the loan banking market. Finally, the variables considered in our paper can be used as a reasonable criterion for valuing the credit conditions of the loan market.

Keywords—loan conditions; risk exposure; credit funds; bank-specific characteristics

I. INTRODUCTION

Bank financing promotes the growth of Chinese companies [1] and the support of the banking system to raise the debt financing. There are many problems in China regarding credit management. Bank risk is one of the important financial risks, including credit risk, and bank credit risk, which is concentrated in the non-performing loan. On the one hand, the bank credit system is largely controversial. State-owned enterprise loans depend on the various advantages of commercial banks, the loan requirements for non-state-owned enterprises, and the distortion of bank credit allocation [2].

On the other hand, the information asymmetry leads to the impact of financial risks for a bank and is not willing to lend [3]. Understanding of the bank's borrowing from banks through various conditions, improving the China credit system and development of bank credits, that is an advantage to the banking market.

II. LITERATURE REVIEW

According to the transaction methods of borrowers and

fund lenders, the way of corporate financing can be divided into public issue and privately placement. Direct issuance means that the use of financial institutions such as banks as an intermediary, but to act as a direct lender to finance direct borrowers. Indirect finance is where borrowers borrow funds from the financial market through indirect means, such as through a financial intermediary [4]. Authors argue that private placement is better than the public offering during the financial crisis. At present, a few papers discuss the credit management of commercial banks in the loan conditions and bank risk exposure [5] [6]. Early scholars studied corporate debt models, they did not divide the difference between bank debts and non-bank private debt. Literature pointed out that bank borrowing brings different financial benefits to enterprises [7]. Therefore, this article explores the relevant factors for commercial banks in the case of Chinese companies. The method of Financing for enterprises includes internal financing, bond financing, stock financing, and indirect financing. However, in China, the development of capitalism is still insufficient, banks still occupy a major position, the bond market is still lacking, and the threshold of the stock market is relatively high, which makes many enterprises can only extend their debts to banks. Due to the bank's financing risk management and the asymmetric information for the borrowers and lender, banks may not lend a loan to the company [8].

Enterprise-scale is considered as primary indicators that hinder corporate finance, and that may cause a risk in the business activities of the enterprise [9][10][11]. The bank cannot judge the business risk of the enterprise from the existing information. At the same time, when the bank provides funds to the smaller enterprises, it faces higher transaction costs, and the bank may raise the interest rate of the SME loan. The cost of SMEs' access to bank funds is much higher. Information asymmetry exists in banks which makes banks refuse to issue the loans for enterprises. The creditors who borrow privately are more effective in supervising companies than corporate debt investors [12].

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According to the literature review, hence, this study proposes the hypothesis:

H1: The bigger the company, the easier it is to get a loan.

The size of the enterprise directly affects the financing model of the enterprise. Large enterprises hold more assets, that may have a higher ability to withstand risks, more standardized and strict management systems and management models. Compared with small and medium-sized enterprises, large enterprises own low debt financing risks, strong risk prediction, and controllability. A higher level of bank credit helps it easier to obtain credit funds.

H2: The better the business situation, the easier it is to get a loan.

The overall asset growth rate of an enterprise indirectly reflects the total asset efficiency of the enterprise. The greater the growth rate of total assets, the stronger the company's total asset operating capacity, the smaller the company's development risk, and the higher the trust of the bank.

H3: The stronger the profitability of the company, the easier it is to get a loan.

One of the main criteria for corporate profitability is to look at asset yields. The higher the return on assets index, the higher the yield of the company, the more net profit it gets, and the more profit that can be distributed. In general, such companies are more willing to convert more profits into corporate capital, so banks are more willing to lend to them, reducing the risk of recoverable loans.

H4: The stronger the company's ability to withstand risks, the easier it is to obtain loans.

By considering the current ratio of the company, it is possible to test the company's ability to pay debts in a short period of time. The higher the relevant index, the stronger its short-term debt repayment ability, and the higher the controllable risk ability, the easier it is to get the favor of the bank.

H5: The higher the earnings per share, the easier it is to get a loan.

The higher the earnings per share, the higher the profit index of each unit in the company's cost, indicating that the company has a stronger ability to create excellent results under generally convenient environmental conditions, that is, the company creates more profits through lower-cost conditions. The earnings per share are the investor. The signals that are most concerned can make the company understand the simplest and clearest.

H6: The higher the opportunity for business growth, the easier it is to obtain loans.

III. METHOD

The use of the model in this paper is the ideas of corporate debt and bank credit based on the loan conditions and bank risk exposure. We analyze the factors affecting the credit financing of enterprises from the scale, operation ability, growth ability,

profitability, solvency, and earnings per share. We use the OLS regression for testing, a regression model as follows:

$$Y = \alpha + \beta_1 SIZE_t + \beta_2 AG_t + \beta_3 ROA_t + \beta_4 CR_t + \beta_5 EPS_t + \beta_6 IG_t + \varepsilon_i \quad (1)$$

where the bank-specific characteristics (see Table I) selected such as the size(SIZE), asset growth rate (AG), income growth rate (IG), return on assets (ROA), current ratio (CR), and earnings per share (EPS).

The overall income growth of an enterprise can reflect the strategic development space of the enterprise. The high growth rate of operating income means that the development is better in the future, and banks willing tend to loan funds higher.

IV. RESULTS

This study selected 463 companies listed in the market. In addition, the sample data collected from the Taiwan Economic Journal (TEJ) in the period 2009-2017. Table II shows descriptive statistics, and Table III reveals correlation coefficients.

The empirical results of the factors affecting the choice of credit by commercial banks are shown in Table IV.

TABLE I. VARIABLE DEFINITION

| Attribution | Indicator | Definition |
|----------------------|------------------------------------|---|
| Loan | Bank loan | Bank loan amount |
| Business scale | Total assets | SIZE= Net fixed assets |
| Operation Capability | Total asset growth rate | AG=Annual asset growth /Total assets |
| Profitability | Return on assets | ROA = profit before interest and taxes / average total assets |
| Resilience to risk | Current ratio | CR = quick assets / current liabilities |
| Profitability | Earnings per share | EPS=After-tax profit/total share capital |
| Growth | Total operating income growth rate | IG=Increase in operating income this year/total operating income in the previous year |

TABLE II. SUMMARY STATISTICS

| Variable | SIZE | AG | ROA | CR | EPS | IG |
|-----------|--------|--------|--------|--------|-------|-------|
| Mean | -15.95 | -3.67 | -6.12 | -0.40 | 0.12 | 28.91 |
| Max. | -0.01 | 13.64 | 6.81 | 18.26 | 14.82 | 52.95 |
| Min. | -65.83 | -29.32 | -46.15 | -13.42 | -6.17 | 38.84 |
| Std. Dev. | 25.61 | 14.70 | 20.24 | 11.67 | 7.66 | 83.27 |
| Skewness | -1.48 | -0.74 | -1.56 | 0.37 | 1.33 | 0.33 |
| Kurtosis | 3.55 | 2.74 | 3.76 | 2.21 | 3.42 | 1.72 |
| J.B. | 2.26 | 0.56 | 2.57 | 0.29 | 1.82 | 0.52 |

TABLE III. PEARSON CORRELATION

| Variable | SIZE | AG | ROA | CR | EPS | IG |
|----------|-------|-------|-------|-------|------|------|
| SIZE | 1.00 | | | | | |
| AG | -0.03 | 1.00 | | | | |
| ROA | -0.18 | 0.81 | 1.00 | | | |
| CR | -0.29 | 0.64 | 0.67 | 1.00 | | |
| EPS | 0.46 | -0.86 | -0.89 | -0.65 | 1.00 | |
| IG | 0.46 | -0.21 | -0.45 | -0.78 | 0.46 | 1.00 |

TABLE IV. OLS RESULTS

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------------|-------------|-------------|-------------|-------|
| C | 4.355 | 0.981 | 4.440 | 0.000 |
| SIZE | 0.984 | 0.067 | 14.743 | 0.000 |
| AG | 0.000 | 0.001 | 0.499 | 0.618 |
| ROA | -0.009 | 0.014 | -0.692 | 0.490 |
| CR | 0.001 | 0.001 | 2.093 | 0.037 |
| EPS | 0.106 | 0.176 | 0.601 | 0.548 |
| IG | -0.001 | 0.001 | -1.027 | 0.305 |
| R-squared | 0.369 | | | |
| Adj. R-squared | 0.359 | | | |
| Log likelihood | -749.905 | F-statistic | 37.984 | |
| Durbin-Watson | 1.902 | Prob. | 0.000 | |

According to the result in Table IV, the six explanatory variables in the model clarified that the impact on the bank loan. The R-squared value is about 0.369, which reflects the degree to which the six explanatory variables fit the model. The P-value of the F test is 0, indicating that the F test data is valid, indicating that the descriptive ability of the regression equation is significant and effective.

Table result shows that the total assets are significantly positive, indicating that the size of the company is significantly positively correlated with the bank loans. The current ration of the company increases the trust of the bank and promotes the financing of the bank. The short-term solvency of enterprises is negatively correlated with the number of bank loans, which indicates that the company's short-term ability to withstand risks does not enhance the bank's trust in enterprises.

V. CONCLUSION

Despite the fact that companies with listed are relatively stable. However, small and medium-sized enterprises often have more choices and ways in financing models. However, there are still exists in corporate financing issues and bank risk management problems. Therefore, an empirical model was established in this paper, we find that the impact of the listed companies on obtaining loan funds. We provide evidence of support and suggestions for solving the difficulties of financing listed companies.

Bank credit not only reflects the level of business capability and profitability of commercial banks. The decline in the operation of the credit loan business will directly reflect the decline in the risk-return and profitability of commercial banks.

We recommend that the level of credit management and the control of operating income and risk can reduce the imbalance of the risk allocation structure and trigger systemic risks of the system.

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