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# Bank Background CEO and Enterprise Short-Term Loan and Long-Term Investment

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**Abstract:** This paper takes A-share listed companies from 2008 to 2018 as samples, and discusses the relationship between bank background CEO and enterprise short-term loan and long-term investment. It is found that the CEO with banking background can significantly inhibit the short-term loan and long-term investment of enterprises. Compared with the highly market-oriented regions and state-owned enterprises, the CEO with banking background has a more obvious inhibitory effect on short-term loan and long-term investment of enterprises. In this paper additionally, PSM, lag variable and Heckman two-stage model are used for robustness test, and the above conclusions are still valid.

**Keywords:** Banking background; Short-term loan and long-term investment; Financing constraint

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## 1. Introduction

At present, China's economy is in a transitional period. Under the supply-side reform, the problems of enterprise financing difficulties and high financing costs still exist. China's formal system is not perfect, and there are still many problems in the financial market. For example, enterprises have few financing channels and insufficient protection for creditors, which leads banks and other institutions to give short-term loans [1]. When the financial environment is restrained, enterprises are limited by funds and have to use short-term debts for production and operation or long-term investment projects (short loans and long investments). Although short loan and long investment can reduce the financing cost [2] of enterprises, it will also cause the increase of business risks and financial risks. The short-term loan and long-term investment behavior of enterprises easily leads to inefficient investment. It has a significant adverse impact on the economic performance of enterprises [3]. The risk of short-term loan and long-term investment of enterprises will affect the financial system of the whole market due to debt default and other behaviors, which will easily lead to systemic financial risk [4-5].

Within the enterprise, CEO plays a decisive role, and the investment and financing schemes of enterprises need to be approved by CEO. In view of this, whether some characteristics of CEO can effectively reduce the short-term loan and long-term investment behavior of enterprises is also a problem worthy of attention. Although the existing literature has discussed the executives with banking background in detail, for example, Su Ling et al. [6] and Liu Hao et al. [7] discussed the influence of corporate credit financing from the bank background directors, and found that the relationship between enterprises and banks can alleviate the financing problems of enterprises, and then obtain more loans. However, the existing literature rarely studies the mismatch between CEO's banking background and enterprise investment and financing period, The research on short-term loan and long-term investment of enterprises seldom involves the management level of enterprises. Therefore, starting from the background of CEO bank, it is also a topic worth studying how the CEO of bank background will affect the mismatch of investment and financing period.

## 2. Literature review and research hypothesis

Matching the term of assets with the term of financing is the basic principle of corporate finance theory. The domestic formal system is not perfect, and the degree of financialization is not high. Institutional defects were once considered as one of the reasons for this situation [8]. Under the restraint of financial environment, short-term debt financing has become an alternative way to ease the financing constraints of enterprises [9]. However, when the legal system is imperfect, enterprises will prefer short-term financing, and the external institutional environment has a great influence on how enterprises decide the debt maturity. The early research on interest rate marketization shows that interest rate marketization can raise the upper limit of interest rate according to the specific market conditions, and then alleviate the preference of enterprises for short-term financing. interest rate liberalization can make it more possible for enterprises to obtain long-term loans, and then alleviate the short-term loan and long-term investment behavior caused by financing constraints [10]. By reviewing the existing literatures, it is found that most of the researches on short-term loans and long-term investment of enterprises at home and abroad focus on macro-monetary policy [9] and financial market environment [4], while the researches on micro-level of enterprises are relatively few. Although the literature has been studied from the perspective of micro-governance and management, there are few studies on the mismatch between the background of senior management banks and the investment and financing period of enterprises.

The research on the background of executive banks and corporate financing constraints is also the focus of academic circles. Berger et al. [11] proves that executives with banking background can ease the constraint of financing surplus of enterprises, and enterprises with bank-enterprise relationship also have lower bank interest rates. Furthermore, Ciamrrra [12] found that the relationship between enterprises and banks can reduce the difficulty of financing, and the stability of this relationship can make banks relax the constraints of loans. Even get more loans. At present, the main financing channel for enterprises in China is debt financing [13]. Therefore, the research on how the background of senior management bank affects the financing constraints of enterprises is also extensive. For example, Deng Jianping and Ceng Yong [14] proved that financial linkage can effectively reduce the financing constraints of enterprises. Cheng Xiaoke [15] found in the empirical results that the relationship between enterprises and banks can alleviate the financing problems of enterprises and obtain more loans. Similarly, Chen Yunsen et al. [16] also showed that the relationship between enterprises and banks can alleviate the financing constraints of enterprises, and then introduce capital investment. The relationship between enterprises and banks is beneficial to enterprises to reduce transaction costs, it is profitable for both banks and enterprises. However, the benefits of this relationship are not absolute. Although the relationship between banks and enterprises can effectively alleviate the financing constraints of enterprises, it will also bring other problems. In addition, Zhai Shengbao et al. [17] also showed that, Establishing the relationship between enterprises and banks can really get the advantage of capital source from the source. However, if the enterprise does not make rational use of this resource, it will further increase the risk of the enterprise.

Based on the theory of relational lending, there are human social relations in domestic society itself, and the relations are not only simple personal connections, but also channels for obtaining external resources. CEO's with banking background can use their former banking relationship circle to build financing channels [18] for enterprises. Enterprises employing executives with banking background can obtain the personal network established in the banking field. Under the financial constraints, enterprises can make full use of the social network relations and capital of executives with banking background, and then obtain credit resources more conveniently [19]. Also before, Tang Jianxin et al. [20] pointed out that these informal systems can effectively make up for the imperfection of the current domestic formal system, help enterprises to obtain more sources of funds through relational lending, and then alleviate the financing constraints of enterprises. Therefore, the CEO with banking background can not only reduce the financing difficulty of enterprises. Its network of contacts can also expand more financing channels, obtain more loans and higher quotas, and even obtain lower-cost financing, effectively reducing the level of financing constraints of enterprises, and then affecting the short-term loans and long-term investment of enterprises.

Based on this, this paper puts forward the following assumptions:

H1: CEO with banking background can restrain short loan and long investment.

## 3. Research and design

### 3.1. Sample selection and data sources

In this paper, the data of listed companies from 2008 to 2018 are used. In order to obtain reliable research results, according to the research practice, the samples are screened as follows:

(1) Excluding the samples of corporate bonds issued by listed companies in the financial and insurance industries

(2) Excluding companies with asset-liability ratio greater than 1

(3) In order to eliminate the interference of outliers. In this paper, all continuous variables are subjected to tail reduction. Finally, 16,900 pieces of data were obtained, all of which came from China Stock Market & Accounting Research Database (CSMAR).

### 3.2. Description of variables

Explained variable: this paper decided to adopt the investment gap method of Kai Zhong et al. [3] and Ma Hong [9]. The specific calculation formula is as follows:

$$SFLI = \frac{Inv - (\Delta Ldebt + \Delta Equity + Ocf + Scf)}{Asset_{t-1}}$$

Explanatory variable: CEO’s Finance background. The main definition refers to Du Yong et al. [18]. If the CEO worked in financial institutions such as banks, securities, trusts, insurance companies and fund companies, take 1, otherwise take 0.

Related variables and definitions are shown in **Table 1.**

### 3.3. Model building

In order to verify my hypothesis, referring to the research models of Kai Zhong et al. [3] and Baiyun Xia [4], the model constructed in this paper is as follows:

$$SFLI = \alpha + \beta_1 Finance + \beta_2 Size + \beta_3 Roa + \beta_4 Lev + \beta_5 Tq + \beta_6 Indboard + \beta_7 Board$$
$$+ \beta_8 Age + \beta_9 Soe + \sum Industry + \sum Year + \varepsilon$$

**Table 1.** Variable definitions

| | variable symbol | Name | Variable definition |
|---|---|---|---|
| **Dependent variable** | *SFLI* | Short-term loan and long-term investment | |
| **independent variable** | *Ceobank* | Bank background CEO | The CEO has worked in financial institutions, and the value is 1, otherwise it is 0 |
| **Control variable** | *Size* | Enterprise scale | Ln (year-end total assets) |
| | *Roa* | return on asset | Net profit/(average of initial total assets and final total assets) |
| | *Lev* | asset structure | Liabilities/assets |
| | *Tq* | investment opportunity | Tobin Q value, the ratio of the company's market value to the book value of total assets |
| | *Indboard* | Number of independent directors | The number of independent directors is logarithmic |
| | *Board* | Director size | The number of directors is logarithmic |
| | *Age* | Company age | The time when the company went public |

### 3.4. Empirical results and analysis

#### 3.4.1. Multiple linear regression analysis

**Table 2.** is the benchmark regression result, in which the first column is the regression between CEO (Ceobank with banking background and SFLI in the year when only the industry is controlled. The results show that there is a significant negative correlation between them, and it is significant at 5%. Further, the model is regressed after increasing the control variables, and the results are shown in the second column. The coefficient between CEO with banking background and enterprise R&D is still significantly negative. In addition, considering the problem of selection errors in this paper, this paper also makes a tendency score matching method. As shown in column (3), there are 7260 matched data, and the data samples are still representative, and the data results are still significantly negative, which provides reliable and robust evidence for the hypothesis of this paper. Further, considering the reverse causality between the CEO of the bank background and the short-term loan and long-term investment of the enterprise, this paper lags behind one period, and the results are shown in column (4). After one period of lagging dependent variable, the results are still stable. Therefore, the results in **Table 2.** confirm the hypothesis that the CEO with banking background can restrain the short-term loan and long-term investment of enterprises.

#### 3.4.2. Heckman two-stage model

In order to make the conclusion of this paper more robust, this paper further adopts Heckman two-stage model. In the first stage, Probit model is used to estimate the inverse Mills (IMR) of CEO's banking background. In the first stage, an exogenous variable needs to be added. In this paper, the annual average of CEO banking background industry (Avg_Ceo) is used as the tool variable. The regression results of Heckman's first stage are shown in column (1) of **Table 3.** There is a significant positive correlation between the annual average of CEO banking background and CEO banking background, which shows that the exogenous variable selection is reasonable. In the second stage, the IMR calculated by the first stage regression is brought into the main regression model for regression analysis, and the results are shown in the table. In the second stage, under the modified endogenous problem, the relationship between CEO's banking background and enterprise's short-term loan and long-term investment is still negative. And it is significant at 5% level. At the same time, the inverse Mills (IMR) coefficient is also significantly correlated, which proves that the model is effective. The above conclusions provide a reliable and robust basis for the hypothesis in this paper, which shows that the hypothesis in this paper cannot be rejected.

**Table 2.** Multiple linear regression

| **Variable** | ***SFLI*** | | | |
|---|---|---|---|---|
| | **(1)** Principal regression | **(2)** Principal regression | **(3)** PSM | **(4)** Lagging the first stage |
| *Ceobank* | -0.017** | -0.016** | -0.022* | |
| | (0.009) | (0.008) | (0.013) | |
| *L.Ceobank* | | | | -0.022** |
| | | | | (0.008) |
| *Size* | | -0.012*** | -0.00200 | -0.013*** |
| | | (0.001) | (0.006) | (0.001) |
| *Roa* | | -1.110*** | -0.986*** | -1.065*** |
| | | (0.023) | (0.103) | (0.025) |
| *Lev* | | 0.001 | -0.021 | 0.001 |
| | | (0.007) | (0.036) | (0.008) |
| *Tq* | | -0.001 | 0.005 | -0.004*** |
| | | (0.001) | (0.004) | (0.001) |
| *Indboard* | | 0.016*** | 0.0240 | 0.015*** |
| | | (0.005) | (0.029) | (0.006) |
| *Board* | | -0.009** | -0.0290 | -0.008* |
| | | (0.004) | (0.023) | (0.005) |
| *Age* | | -0.001*** | -0.003** | -0.001*** |
| | | (0.000) | (0.001) | (0.000) |
| *Cons* | -0.168*** | 0.149*** | 0.193 | 0.262*** |
| | (0.036) | (0.042) | (0.210) | (0.054) |
| Industry year | *YES* | *YES* | *YES* | *YES* |
| *N* | 16900 | 16900 | 7260 | 13347 |
| *adj_$R^2$* | 0.048 | 0.196 | 0.243 | 0.199 |

Note: All models include industry and annual dummy variables. The value in brackets is heteroscedasticity robust standard error; * * *, * *, and * indicate that the two-tailed T test is statistically significant at the level of 1%,5%, and 10%, respectively. Same below.

#### 3.4.3. Mechanism test

As mentioned earlier, the CEO with banking background can alleviate the financing constraints of enterprises, and then affect the short-term loan and long-term investment of enterprises. Therefore, according to the research of Wei Zhihua et al. [21], KZ index represents financing constraints, and the greater the KZ index, the greater the financing constraints. In this paper, the sample data are divided into two groups according to the annual median of KZ index industry, and if it is greater than the median, 1 indicates the group with high financing constraints. The other group represents the group with low financing constraints. Through grouping regression, the results are shown in **Table 4.** The higher the group of financing constraints, the more significant and larger the coefficient is for the CEO with banking background to inhibit the behavior of short-term loans and long-term investment, which indicates that the CEO with banking background will alleviate the financing constraints of enterprises, and then alleviate the behavior of short-term loans and long-term investment, which also confirms the rationality of this theoretical analysis.

**Table 3.** Heckman two-stage model

| **Variable** | ***Ceobank*** | ***SFLI*** |
|---|---|---|
| | **(1)** | **(2)** |
| | **First stage** | **Second stage** |
| *Avg_Ceo* | 2.965** | |
| | (1.286) | |
| *IMR* | | 0.246*** |
| | | (0.036) |
| *Ceobank* | | -0.015** |
| | | (0.008) |
| *Size* | 0.03 | -0.013*** |
| | (0.024) | (0.002) |
| *Roa* | -0.387 | -1.220*** |
| | (0.425) | (0.023) |
| *Lev* | -0.0520 | -0.024*** |
| | (0.143) | (0.007) |
| *Tq* | 0.090*** | 0.020*** |
| | (0.019) | (0.003) |
| *Indboard* | 0.0850 | 0.031*** |
| | (0.110) | (0.006) |
| *Board* | -0.00600 | -0.011** |
| | (0.088) | (0.004) |
| *Age* | 0.011** | 0.001** |
| | (0.005) | (0.000) |
| *Cons* | -2.096*** | -0.492*** |
| | (0.570) | (0.070) |
| Industry year | *YES* | *YES* |
| *N* | 16876 | 16876 |
| *adj_R²* | 0.177 | 0.195 |

**Table 4.** Intermediary Effect of Financing Constraints

| Variable | *SFLI* | |
|---|---|---|
| | **(1)**<br>**High financing constraints** | **(2)**<br>**Low financing constraints** |
| *Ceobank* | -0.025* | -0.006 |
| | (0.014) | (0.012) |
| *Size* | -0.015*** | -0.010*** |
| | (0.002) | (0.002) |
| *Roa* | -0.993*** | -1.409*** |
| | (0.032) | (0.043) |
| *Lev* | -0.002 | 0.003 |
| | (0.012) | (0.011) |
| *Tq* | 0.001 | 0.002 |
| | (0.002) | (0.002) |
| *Indboard* | 0.026*** | 0.009 |
| | (0.009) | (0.007) |
| *Board* | -0.015** | -0.004 |
| | (0.007) | (0.006) |
| *Age* | -0.002*** | -0.001*** |
| | (0.000) | (0.000) |
| *Cons* | 0.162 | 0.101** |
| | (0.117) | (0.048) |
| Industry year | *YES* | *YES* |
| *N* | 5979 | 10921 |
| $adj\_R^2$ | 0.234 | 0.175 |

## 4. Research conclusions

After the above robustness test, mechanism analysis and further research, this paper draws the following points: the CEO in the banking background can significantly inhibit the short-term loan and long-term investment of enterprises, and the conclusion of adopting PSM, lag variable and Heckman two-stage model is still robust. CEO under the background of bank restrains short-term loans and long-term investment of enterprises mainly from the perspective of financing constraints. The CEO with banking background can be associated with the bank, which makes it easier to gain the trust of the bank and obtain financing, thus alleviating the financing constraints of enterprises and further affecting the short-term loan and long-term investment of enterprises.

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