# How Does the Corporate Investor Protection Affect the Banks' Credit Decision?

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***Abstract*—Investor protection has always been a hot topic in the theoretical and practical circles. This study takes listed companies in Shanghai and Shenzhen from 2011 to 2014 as a sample, to test the impact of the level of investor protection on the bank credit decision, based on the bank credit market. The results show that the higher the level of investor protection of listed companies, the lower the cost of long-term bank loan. This paper attempts to study the relationship between the levels of investor protection of listed companies and bank credit decision, and its influence mechanism and action path.**

***Index Terms*—Bank credit decision, investor protection, influence mechanism, the cost of long-term bank loans**

## I. Introduction

Investor protection has always been a hot topic in the theoretical and practical circles, and this problem is in the ascendant for emerging capital markets. Most of the previous studies use LLSV (La Porta, Lopez de Silanes, Shleifer and Vishny) analysis framework, and from the different systems and legal backgrounds, transnational or trans-regional comparative studies were conducted to explore the economic consequences of investor interest protection differences in different legal systems. However, this framework cannot be used to study the differences in investor protection of different companies and their economic consequences in the context of the implementation of the same legal rules in the same country. In the unique institutional context of China, because the capital market is developing late and the laws and regulations are not perfect, it has not yet formed an effective investor protection structure, and the level of investor protection between enterprises is not the same. Some studies have shown that the differences in the implementation of investor protection at different levels will have an impact on their external financing behavior and its effectiveness, mainly in terms of capital structure and equity financing costs of enterprises. There is little research on the impact of debt financing. So, will creditor decision-making be affected by investor protection implementation differences? What are the influence mechanism and action path? Therefore, this paper attempts to study companies in the same legal environment from the perspective of financing cost based on our bank credit market and study the impact of investor protection on bank credit decision.

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## II. The Literature Review, Theory Analysis and Research Assumptions

LLSV believe that in the country where investor legal protection is better, external shareholders can have strong constraints and supervision on the management, the company's earnings are not easily occupied by insiders but in the form of dividends returned to external investors, so the company will be easier to obtain external financing[1]. Dittmar and Mahrt-Smith argue that in countries where investor protection is perfect, the insider's ability to seize control of private interest can effectively restrain the market value of cash holdings [2]. Mclean, Zhang and Zhao (2012) examined the impact of investor protection on enterprise-level resource allocation from data from 1990 to 2007 in 44 countries around the world. They argue that, under stronger investor protection, corporate share prices reflect more accurately the fundamentals, more effective corporate investments, and greater availability of external financing, resulting in less financing constraints [3]. Biddle, Hilary and Verdi believe that good investor protection can effectively curb and reduce the potential information asymmetry between external investors and internal managers, and reduce the company's external financing costs [4]. Jun Xie (2008) found that investor protection has a significant impact on the company's debt maturity structure, a better investor protection mechanism to promote the company to obtain long-term debt ratio increased[5]. Fuxiu Jiang, Xiaoqiang Zhi, Min Zhang (2008) and Yifeng Shen, Min Xiao, Tao Lin (2009), respectively from the questionnaire survey and 'self-examination report and rectification plan' published by listed companies to establish an investor protection implementation index, studied how the level of investor protection of listed companies affect the financing cost and the capital structure[6,7]. The mechanism of investor protection on corporate governance, corporate value and stakeholder behavior in capital market is complex and diversified, both directly and positively, such as the benefit of dividends, reducing the intrusion of insiders, and the cost of corporate finance, and enhancing the value of the company. But at the same time there are a few studies have been the opposite conclusion, such as the strengthening of shareholder protection easier for insiders to manipulate the surplus and damage the interests of the company, but also damage the interests of creditors and improve the business to bear the level of risk and so on[8]. Many studies have not yet been

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conclusive. The research object of the existing literature mainly focuses on the relationship between the legal protection of the investor and the corporate governance, and few of the financing cost.

In the principal-agent relationship, the agency cost is due to the client and the agent's pursuit of the different interests of the target. In theory, from the micro level of the company, when a company's investor protection is better implementation, the controlling shareholder and manager of the encroachment reduction, will inevitably reduce the company's internal agency costs, enhance corporate performance, reduce the default risk of listed companies, and finally enable listed companies to obtain lower debt financing costs. On the other hand, from the view of the information, due to the existence of information asymmetry between the principal and the agent, the agent is likely to use their own information advantages for the pursuit of higher interests and engages in high-risk investment projects, thus undermining the interests of the client. Whether the external investor can effectively supervise and implement its own rights depends on the fairness and accuracy of the financial information. When the investor protection is better, the transparency of the company's information is improved and the financial information is more real. Investors can supervise the information through public information and make accurate analysis and judgment, which will greatly reduce the information risk. For more real and transparent financial information, banks and other creditors more believe that the company has the ability and timely repayment and willing to provide loans, which will inevitably reduce the difficulty of financing the company, thereby reducing the company's borrowing costs. Thirdly, the deprivation of the controlling shareholder will be constrained to a certain extent in a company with better investor protection, so that the potential equity capital suppliers in the capital market are more willing to provide equity capital for the company. The improvement of investor protection makes the reduction in the cost of the company's equity, which means that the level of competition between shareholders and creditors, banks in order to maintain long-lived clients and obtain more benefits, will choose to reduce the cost of debt financing to ensure long-term cooperation with the company. The above three reasons may cause differences in the long-term loan costs due to differences in the level of investor protection among different companies. Figure1 shows the influence path of corporate investor protection on the bank's credit decision.

Based on the above analysis, this paper puts forward the basic hypothesis that the bank long-term loan cost is negatively related to the level of corporate investor protection when the other conditions are the same, i.e., when the level of corporate investor protection is higher, the long-term loan cost is lower.

## III. The Model Design and Data Sources

### A. Sample Selection and Data Source

This paper selected 2011-2014 Shanghai and Shenzhen all the A shares (excluding the GEM) non-financial listed companies for the study sample. The sample selection criteria are as follows: (1) to eliminate the lack of data listed companies; (2) excluding ST, *ST listed companies, due to such listed companies in the financial situation, continuing operating capacity and other aspects of abnormalities, excluding these data can ensure the consistency of the nature of the sample; (3) processing the extreme value of the main continuous variable, the upper and lower 1% of the extreme value of the exclusion to prevent the abnormal value of the data interfere with the empirical results. After screening by the above criteria, the four-year sample data of 1663 companies were obtained, of which 772 were non-state-owned listed companies, accounting for 46.42% of the total sample; 891 state-owned listed companies, accounting for 53.58% of the total sample. The bank long-term loan costs are obtained through manual collection and collation of the relevant data in the financial statements and the notes in the statements of the listed companies published by Juchao Website. Other relevant variables of the listed company are mainly obtained through the Wind database, the CSMAR database and the website of the People's Bank of China.

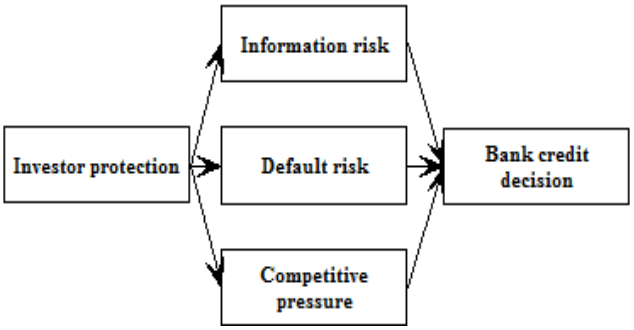


Fig. 1. Influence path of corporate investor protection on the bank's credit decision.

### B. Variable Definition and Model Design

The dependent variable of this paper is the long-term loan cost from bank. By the influence of the Chinese bond market, the corporate debt financing mainly relies on the bank loan. Therefore, this paper chooses the long-term borrowing cost of the listed company as the dependent variable. Learn from Yiming Hu, Songlian Tang (2007) and Jigao Zhu, Zhengfei Lu and Ran Zhang (2009), we hand-collected 2011-2014 Shanghai and Shenzhen A-share listed companies in the financial statements and notes disclosed in the year of each new long-term borrowing details (including the amount of borrowings, borrowing conditions, starting and ending time and the level of interest rates), using the weighted average interest rate of all its new long-term borrowings to measure the long-term loan costs [9], [10]. Drawing on the practice of Zhihua Xie *et al.*, with the Accounting Investor Protection Index issued by Beijing Industrial and Commercial University to measure the level of corporate investor protection [11]. Combined with the purpose of this study and learning from the relevant literature, we control the possible other variables that impact on the bank's long-term loan costs. See Table I for detailed explanations of the variables.

Using Graham's model, the following regression model was established to test the hypothesis [12]:

$$\begin{aligned} \text{Rate} &= \beta_0 + \beta_1 Investor + \beta_2 State + \beta_3 Fmarket \\ &+ \beta_4 Lev + \beta_5 Lnsize + \beta_6 Fix + \beta_7 ROA + \beta_8 Growth \\ &+ \beta_9 Turnover + \beta_{10} Cash + \beta_{11} One + \beta_{12} \text{Opinion} \\ &+ \sum Year + \sum Ind + \varepsilon \end{aligned}$$

## IV. Empirical Testing and Analysis of the Results

### A. Sample Selection and Data Source

Table II shows the distribution of investor protection index of listed companies in all the A shares (excluding the GEM) in Shanghai and Shenzhen in 2011-2014.

From the data in the table, the investor protection index is not evenly distributed in each interval, the proportion is less than 40 points, only 0.24%, and the investor protection index is between 40 and 50 points, there are 204 sample, accounting for 12.27% of the total sample. For most of the listed companies the investor protection index is mainly concentrated in 50-60 points, there are 1201 data, accounting for 72.22% of the overall, more than 60 points only 254, accounting for 15.27%. We can see that China's current investor protection index distribution is generally between 50 to 60 points, and does not reach the passing line, and the grid above the listed companies accounted for only 15.27%, indicating that the overall level of investor protection is not high, investors do not get well protected.

### B. Correlation Analysis

Table III shows the spearman correlation coefficient table of the main variables. It can be seen from the table that the bank's long-term loan cost (Rate) is negatively correlated with the investor protection level at 5%. This shows that investor protection has certain significance on the long-term loan costs of banks. When the level of investor protection is higher, the lower the cost of long-term loan of banks obtained by listed companies, which proves the hypothesis of this paper.

### C. Multiple Linear Regression Analysis

In order to verify the hypothesis, this paper selects the full sample for multiple linear regression analysis. It can be seen from the regression results of the complete sample in Table IV that the regression coefficient of the investor protection level is -0.023, and statistically significant at the 1% level, indicating that there is a significant negative correlation between the bank's long-term loan costs and investor protection after controlling the relevant variables. The empirical results verify the establishment of the study hypothesis and obtain the more significant data support.

In addition, from the relevant control variables of the regression analysis to analyze, the property variable (State) regression coefficient is -0.161, and at 5% level significantly, the regression coefficient of the financial eco-environmental index is negatively correlated at the 5% level, and the regression coefficient of the debt ratio is significantly positively correlated at 1% level, and the regression coefficient of asset size and solvency is significantly negative at 1%. The above shows that the better the financial environment in which listed companies are located, the smaller the debt ratio, the larger the asset size, the stronger the solvency, the lower the cost of obtaining long-term loans from banks, and once again proves that we control the main factors that affect long-term loan costs. The adjusted  reaches 23.7%, which indicates that the model has better fitting ability and good explanatory ability.

TABLE I: The Description of Variables

| Variable properties | Variable identification | Variable Name | Definition |
|---|---|---|---|
| **Dependent Variable** | Rate | Cost of bank long-term loan | the weighted average interest rate of the company's new long-term borrowings |
| **Independent Variable** | Invp | Corporate investor protection | Accounting Investor Protection Index issued by Beijing Industrial and Commercial University |
| | State | Property rights | The actual control of the company for the central or local government is the state-owned property, the value of 1, otherwise 0 |
| | Fmarket | Financial ecological environment | Financial ecological environment index |
| | Lev | Financial risk | Asset - liability ratio at the end of the year |
| | Insize | Asset size | The natural logarithm of the total assets at the end of the period |
| | Fix | Asset term | The ratio of net fixed assets to total assets at the end of the period |
| | ROA | Profitability | The ratio of net profit to total assets |
| | Growth | Growth capacity | Operating income growth rate |
| | Turnover | Solvency | The ratio of sales revenue to total assets |
| | Cash | cash flow | The ratio of the net amount of operating cash flow to the average total assets |
| | One | Ownership concentration | Shareholding ratio of major shareholders |
| | Opinion | Financial statement audit opinion | The financial statements are issued as non-standard audit opinion, the value is 1, otherwise 0 |
| | Year | Year dummy variable | To take 2011 as a reference system, adding 2012, 2013 and 2014 year dummy variable |
| **Control Variables** | Ind | Industry dummy variable | According to the SFC classification standards, to take a industry as a reference industry, joined the other 11 industry dummy variables |

TABLE II: THE DISTRIBUTION OF INVESTORS' PROTECTION INDEX

| Distribution / Points | Full sample | Percentage (%) | Nation-owned | Percentage (%) | Non-nation-owned | Percentage (%) |
|---|---|---|---|---|---|---|
| <40 | 4 | 0.24 | 2 | 0.22 | 2 | 0.26 |
| 40-50 | 204 | 12.27 | 73 | 8.19 | 131 | 16.97 |
| 50-60 | 1201 | 72.22 | 660 | 74.07 | 541 | 70.08 |
| >60 | 254 | 15.27 | 156 | 17.52 | 98 | 12.69 |
| 总计 | 1663 | 100 | 891 | 100 | 772 | 100 |

TABLE III: THE CORRELATION ANALYSIS

| Variables | Rate | Investor | State | Fmarket | Lev | Lnsize | FIX | ROA | Growth | Turnover | Cash | One | Opinion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rate** | 1.000 | | | | | | | | | | | | |
| **Investor** | -0.149** | 1.000 | | | | | | | | | | | |
| **State** | -0.164** | 0.129** | 1.000 | | | | | | | | | | |
| **Fmarket** | -0.006 | 0.194** | -0.035 | 1.000 | | | | | | | | | |
| **Lev** | 0.126** | -0.078** | 0.182** | -0.041 | 1.000 | | | | | | | | |
| **Lnsize** | -0.194** | 0.262** | 0.332** | 0.018 | 0.461** | 1.000 | | | | | | | |
| **FIX** | -0.261** | -0.107** | 0.152** | -0.241** | -0.176** | -0.036 | 1.000 | | | | | | |
| **ROA** | -0.045 | 0.131** | -0.093** | 0.031 | -0.316** | -0.043 | -0.021 | 1.000 | | | | | |
| **Growth** | 0.098** | 0.046 | -0.101** | 0.002 | 0.010 | -0.028 | -0.050* | 0.341** | 1.000 | | | | |
| **Turnover** | -0.279** | 0.096** | 0.078** | 0.054* | 0.032 | 0.039 | 0.223** | 0.159** | 0.174** | 1.000 | | | |
| **Cash** | -0.196** | 0.021 | 0.087** | -0.061* | -0.186** | -0.018 | 0.394** | 0.284** | 0.010 | 0.180** | 1.000 | | |
| **One** | -0.051* | 0.112** | 0.198** | 0.094** | 0.073** | .0242** | -0.025 | 0.073** | 0.006 | -0.002 | 0.000 | 1.000 | |
| **Opinion** | 0.022 | -0.103** | -0.014 | -0.058* | 0.079** | -0.029 | -0.015 | -0.059* | -0.047 | -0.046 | -0.068** | -0.021 | 1.000 |

Note: **, * Significant at 1% and 5% levels.

TABLE IV: THE MULTIPLE REGRESSION ANALYSIS

| Variables | coefficients | T value |
|---|---|---|
| Intercept | 11.534 | 23.483*** |
| Investor | -0.023 | -3.094*** |
| State | -0.161 | -2.387** |
| Fmarket | -0.582 | -2.280** |
| Lev | 0.717 | 3.240*** |
| Lnsize | -0.262 | -8.673*** |
| Fix | -0.225 | -1.020 |
| ROA | 0.172 | 0.288 |
| Growth | 0.306 | 3.126*** |
| Turnover | -0.163 | -2.924*** |
| Cash | -0.710 | -1.638 |
| One | 0.130 | 0.678 |
| Opinion | -0.009 | -0.031 |
| Year | control | |
| Ind | control | |
| N | 1663 | |
| adjusted $R^2$ | 0.237 | |
| F value | 20.891 | |

Note: ***, **, * Significant at 1%, 5%, and 10% levels.

## V. THE CONCLUSIONS AND REVELATION

The study finds that under the premise of controlling the relevant main variables, the long-term bank loan cost is negatively correlated with the level of investor protection, that is, the higher the level of investor protection of listed companies, the higher the cost of plunder of large shareholders, the lower the agency conflict with the agent, the lower the degree of asymmetry of the information between the company and the bank, the less the risk of default, and as a creditor bank believes that the listed company has the ability to eventually fulfill the debt contract, asking the lower return rate, so the listed companies to obtain long-term bank loan costs are lower.

Based on the above conclusions, this paper draws the following two implications:

1) Perfect investor legal protection system is the foundation to improve the level of investor protection. In the legislative level of investor protection, although China has also introduced a number of legal protection system, but there are still many issues, e.g., the legal settings to protect investors are not perfect, the executive power is inadequate and other issues. Investor protection is poor.
2) China should start from the source of the law for the listed companies to create a good legal environment of the investor protection, improve the legal system of investor protection, as soon as possible the introduction of relevant investor protection laws and regulations,

increase law enforcement, enhance efficiency of law enforcement, legitimate rights and interests.

3) Although the overall level of investor protection of listed companies in China is not high, but the degrees of investor protection among the companies are still significant different. The relatively low cost of financing for listed companies is relatively low.
4) The empirical results of this paper also show that the main creditors such as banks in China have been able to differentiate the listed companies with different levels of investor protection to a certain extent. Therefore, listed companies should pay attention to their own investor protection differences, internally to form an effective internal control mechanism to improve investor awareness and improve the level of investor protection to creditors and other external investors to pass a good signal in order to improve corporate financing efficiency, and reduce financing costs.

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