

Research on the Relationship between Analyst Forecast and Chinese Listed Companies' Long-term Use of Short-term Debt

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Abstract: Under the background that the central government pointed out “Ensuring that no major systemic financial risks will occur”, this study explores the mitigation mechanism of the long-term use of Short-term debt. Using the data of A-share listed companies in Shanghai and Shenzhen from 2010 to 2021, The results show that analysts' Forecast can significantly inhibit the phenomenon of the long-term use of Short-term debt, and financing constraints play a partial intermediary role between them; Under the background of the long-term construction of China's capital market at this stage, it is of practical significance to how to cooperate with the construction of macro capital market, provide micro guarantee and prevent major systemic financial risks.

Keywords: The Long-term Use of Short-term Debt; Analyst forecast; Financing constraints

1. Introduction

Since the 19th National Congress of the CPC Central Committee pointed out the need to “hold the bottom line without systemic financial risks”, the problem of enterprise debt maturity allocation has gradually attracted the research of many scholars. The matching of enterprise debt maturity is a very important factor determining enterprise risk. For the China, the average long-term use of short-term debt of listed companies has remained above 20% from 2000 to 2019, which shows that the debt maturity mismatch of listed companies is mainly the long-term use of short-term debt.

The long-term project fund recovery cycle of the enterprise is long, needs to constantly roll short-term debts^[1]. However, once the rolling short-term debts of the enterprise cannot be sustained, the debt default will have a strong impact on the financial market^[2]. The long-term use of Short-term debt has become a potential factor causing various systemic financial risks in China^[3].

The research on the antecedent mechanism of enterprise the long-term use of Short-term debt has formed two different perspectives. One is the macro perspective. China's imperfect capital market is the driving factor of enterprise the long-term use of Short-term debt^[4]. Another kind of view is that the short-term debt is affected by the internal factors of the enterprise^[5]. This study holds that under the background that the construction of capital market is difficult to achieve excellent results in the short term, it is of valuable practical significance to explore how to provide ensure from a micro perspective.

With the development of the capital market, the role played by analysts is gradually valued. Analysts play the role of information bridge and social supervisor between enterprises and the public^[6]. This study believes that analysts' Forecast will largely affect the evaluation of enterprises by external personnel, and should have an impact on the long-term use of Short-term debt of enterprises.

The possible marginal contributions of this paper are as follows: First, it supplements the research on the influencing factors of alleviating the mechanism of the long-term use of Short-term debt of enterprises. The existing literature on the mitigation mechanism of enterprise the long-term use of Short-term debt mostly focuses on macro factors^[7]. This paper verifies that the analyst Forecast can also inhibit the phenomenon of the long-term use of Short-term debt, which is helpful to objectively and systematically understand the antecedents and mitigation paths of the long-term use of Short-term debt.

Second, this study extends the impact mechanism of analyst Forecast on enterprises. It has been pointed out in the literature that analyst forecasts can affect Investor Sentiment^[8] The Risk of Stock Price Collapse^[9], Audit^[10], Innovation^[11]. This study investigates the impact of analyst forecasts on enterprise debt allocation, and further expands the research on the impact mechanism of analyst forecasts on enterprises.

2. Theoretical Analysis and Research Hypothesis

2.1 Analyst Forecasts and Long-term Use of Corporate Short-term Debt

The rolling short-term debt behavior of enterprises will aggravate the credit risk and liquidity risk of enterprises^[12]. This paper believes that as an important factor affecting managers' decision-making, analysts' Forecast should have a certain impact on the phenomenon of the long-term use of Short-term debt of enterprises.

Specifically, from the perspective outside, the important antecedent of the long-term use of short-term debt is the existence of information barriers between enterprises and financial institutions such as banks. Signal transmission theory points out that information

will be transmitted from the information advantage side to the information disadvantage side. Analysts have information advantages as professionalism, can act as a bridge to alleviate the degree of information asymmetry^[13], which will have an inhibitory effect on the phenomenon of the long-term use of Short-term debt of enterprises.

From the perspective of the enterprise, if the enterprise does not achieve the business situation consistent with the analyst forecast, it will affect the career development of managers. Managers will cater to analysts' forecasts for their own interests. So as to inhibit the long-term use of short-term debt.

The first hypothesis of this study is put forward:

H1: Analysts predict can curb the Long-term Use of Short-term Debt of enterprises.

2.2 Analyst Forecasts, Financing Constraints and Long-term Use of Short-term Debt

Firstly, analysts predict that they can provide professional information for financial and credit institutions, reduce the additional cost caused by information asymmetry between enterprises and financial institutions such as banks. It will play a "quasi guarantee" effect, which will reduce the financing constraints of banks and other financial institutions on enterprises, and then inhibit the phenomenon of the long-term use of Short-term debt of enterprises.

Secondly, based on the trust theory, trust is the basis of exchange. Analysts predict that it provides reasonable expectations between enterprises and financial institutions, can improve the degree of mutual trust between enterprises and external stakeholders, reduce transaction costs^[14], which will inhibit the financing constraints on the enterprise, and then inhibit the long-term use of short-term debt.

Finally, according to the supervision hypothesis of analysts, analysts play the role of supervisor, which can reduce the agency cost of enterprises, reduce the financing constraints of enterprises, and inhibit the phenomenon of the long-term use of Short-term debt of enterprises.

The second hypothesis of this study is put forward:

H2: Analysts forecast that it can reduce the financing constraints of enterprises, and then inhibit the long-term use of Short-term debt.

3. Study Design and Variable Definition

3.1 Sample Data Source

This study selects the data of A-share listed companies in Shanghai and Shenzhen from 2010 to 2021, Samples of missing data, the financial industry and poor management were removed. Finally, 11311 valid sample data are obtained. The data are from CSMAR database.

3.2 Variable Definition

3.2.1 Explained Variable

Using the difference between the proportion of short-term liabilities in total liabilities and the proportion of short-term assets in total assets as the proxy variable. The larger the index, the higher the degree of long-term use of short-term debt.

3.2.2 Explanatory Variables

This study take the ratio of analysts' predicted net profit and analysts' predicted operating income of the sample in the current year as the proxy variable of analysts' forecast. The larger the data, the better the analysts' forecast.

3.2.3 Mediating Variables

The absolute value of the SA index is selected as the proxy variable of enterprise Financing Constraints. The greater the index, the higher the Financing Constraint.

3.2.4 Control Variables

This study controlled for control variables from both micro and macroscopic perspectives. The meaning of specific variables is shown in Table 1.

Table 1 List of Variables

Variable Name	Variable Meaning	Computing Method
<i>Sdla</i>	The Long-term Use of Short-term Debt	$(\text{Total Short-term Borrowings} / \text{Total Liabilities}) - (\text{Current Assets} / \text{Total Assets})$
<i>Forecast</i>	Analyst Forecast	$\text{Mean}(\text{Analysts Forecast Net Profit}) / \text{Mean}(\text{Analysts Forecast Operating Revenue})$
<i>SA</i>	Financing Constraints	$\text{Abs}(-0.737 * \text{Size} + 0.043 * \text{Size}^2 - 0.04 * \text{Age})$
<i>Size</i>	Company Size	Natural Logarithm of Total Assets of the Company
<i>Lev</i>	Asset Liability Ratio	Total Liabilities / Total Assets
<i>Fat</i>	Turnover Rate of Fixed Assets	Operating Income / Average Net Fixed Assets
<i>Roa</i>	Net Profit Margin of Total Assets	Net Profit / Average Balance of Total Assets
<i>Growth</i>	Growth Rate of Operating Revenue	Increase in Operating Revenue / Total Operating Revenue of the Previous Year
<i>First</i>	Shareholding Ratio of the Largest Shareholder	Shareholding Ratio of the Largest Shareholder / Total Shares
<i>M2</i>	M2 Money Supply Growth Rate	M2 Money Supply Growth / Total M2 Money Supply of the Previous Year
<i>Pi</i>	Macro-economic Climate Index	The Macroeconomic Prosperity/consistency Index of Each Year
<i>Bank</i>	Banking Boom Index	Weighted Evaluation of Bankers

4. Regression Result Analysis

4.1 Descriptive Statistics

The results are shown in Table 2. The average value of *Sdla* is 0.2409 and the median is 0.24, it means that most of the sample have a certain proportion of long-term use of short-term debt, which is in line with the actual situation. The maximum value Forecast is 0.5 and the minimum value is -0.04, which proves that the business prospect of the sample data selected in this study basically shows an upward trend.

Table 2 Descriptive Statistics

VarName	Obs	Mean	SD	Min	Median	Max
<i>Sdla</i>	11311	0.2409	0.189	-0.34	0.24	0.71
<i>Forecast</i>	11311	0.1277	0.094	-0.04	0.11	0.50
<i>Controls</i>	YES	YES	YES	YES	YES	YES

4.2 Correlation Test

Table 3 Correlation Test

	<i>Sdla</i>	<i>Forecast</i>	<i>Controls</i>
<i>Sdla</i>	1		
<i>Forecast</i>	-0.076***	1	
<i>Controls</i>	YES	YES	YES

Note : * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The correlation coefficient between the *Forecast* and *Sdla* is -0.076, and passed the significance test at the 1% level, which confirmed the hypothesis of this study on the relationship between the two. The absolute value of the correlation coefficient between other variables is less than 0.5, excluding multicollinearity between variables.

4.3 Regression Result Analysis

The first column reports the regression results of Hypothesis 1. The influence coefficient of *Forecast* on enterprise long-term use of *Sdla* is -0.1911, which shows that the analyst forecast can significantly inhibit the long-term use of short-term debt, which verifies Hypothesis 1.

Table 3 Multiple Regression Results

Variable	(1) <i>Sdla</i>	(2) <i>SA</i>	(3) <i>Sdla</i>
<i>Forecast</i>	-0.1911*** (-8.2667)	-0.1381*** (-4.2913)	-0.1816*** (-7.8874)
<i>SA</i>			0.0683*** (10.1247)
<i>Control</i>	YES	YES	YES
<i>year</i>	YES	YES	YES
<i>industry</i>	YES	YES	YES
<i>_cons</i>	-3.5485*** (-7.0944)	10.7710*** (15.4615)	-4.2843*** (-8.5139)
<i>N</i>	11311	11311	11311
<i>R</i> ²	0.266	0.156	0.273

Note: t statistics in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The second and third columns are the regression results of Hypothesis 2. The results show that the impact coefficient of *Forecast* on *SA* is -0.1381, which proved that *Forecast* can reduce *SA*, The *Forecast* and *SA* are introduced into the model at the same time, which proves that *SA* can improve the *Sdla*. The influence coefficient of *Forecast* on *Sdla* is -0.1816, and its absolute value is less than the absolute value of *Forecast* coefficient in Formula 1, It shows that *SA* plays a partial intermediary role, which verifies Hypothesis 2.

4.4 Robustness Test

4.4.1 The Explanatory Variable Lags by One Phase

The influence coefficient of the *Forecast* on the *Sdla* is -0.1721, and passed the significance test at the 1% level, which is consistent with the conclusion of Hypothesis 1 in this paper.

4.4.2 Change the Explanatory Variable Indicators

The calculation method of explanatory variables is replaced by :

The result is consistent with the conclusion of Hypothesis 1.

Table 4 Robustness Test

variable	The Explanatory Variable Lags by One Phase <i>Sdla</i>	Change the Explanatory Variable Indicators <i>Sdla</i>	Change the Way of Regression <i>Sdla</i>	PSM <i>Sdla</i>

Forecast	-0.1721*** (-6.6241)	-0.0578*** (-8.4908)	-0.2017*** (-6.7881)	-0.1911*** (-8.2433)
Control	YES	YES	YES	YES
year	YES	YES	YES	YES
industry	YES	YES	YES	YES
_cons	-13.3117*** (-8.4239)	-3.5555*** (-7.1100)	-0.8392* (-1.7901)	-3.5968*** (-7.1794)
N	7693	11311	11311	11292
R ²	0.289	0.266	0.044	0.266

Note: t statistics in parentheses, * p < 0.1, ** p < 0.05, *** p < 0.01

4.4.3 Change the Way of Regression

The regression method is replaced by panel regression, and the fixed effect is selected to test the main effect again. The results are consistent with the test results of Hypothesis 1.

4.4.4 PSM

A PSM of radius 0.01 was performed with control variables, year, and industry as matching variables. After excluding the mismatched sample data, the regression is carried out again. The regression results show that the effect of Forecast on the Sdla is still negative and significant.

5. Conclusion and Enlightenment

Using the data of Listed Companies in Shanghai and Shenzhen from 2010 to 2021, this study empirically analyzes the impact mechanism between analysts' Forecast and long-term use of short-term debt. The results show that analysts' Forecast can significantly inhibit the phenomenon of long-term use of short-term debt, and financing constraints play a partial intermediary role between them.

The Enlightenment of this research conclusion to management practice lies in: First, it has important reference significance to alleviate the short-term debt and long-term utilization mechanism. Analysts play an important role in the allocation of debt maturity. Enterprise should pay attention to the impact of analysts' Forecast on themselves and give full play to the positive role of analysts' forecast.

Second, it provides a micro guarantee perspective for preventing and resolving major systemic financial risks. This study verifies the mitigation mechanism of analysts to alleviate the long-term use of short-term debt. While paying attention to the construction of capital market, the state should pay attention to the positive role of analyst forecast mechanism and establish a two-way communication mechanism between analysts and the market.

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