Media Coverage to Panel Data Analysis on the Impact of Listed Companies' Debt Financing Costs

Yijun Peng
Shaanxi Normal University International Business School, Xi'an, China

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Abstract: At present, small and medium-sized enterprises generally face the difficulty of financing and expensive financing. As a company's external governance force, the media plays a role of supervision and corporate governance, which has a significant impact on the cost of debt financing. This paper takes A-share listed companies on the small and medium board in 2014-2018 as the research object, constructs a panel data model for multiple regression analysis, empirically examines the mechanism of media attention on debt financing costs, and further explores the differences in the impact of different property rights. The results show that media attention can help reduce the company's debt financing costs, while reports of different natures have different impacts in companies with different property rights, which can provide useful references for companies to ease financing constraints, government supervision, and creditor self-protection.

1 INTRODUCTION

At present, how to alleviate corporate financing constraints has become a common concern of the theoretical and practical circles, and has attracted great attention from relevant government departments. The report of the 19th National Congress of the Communist Party of China clearly pointed out that "deepening the reform of the financial system and enhancing the ability of financial service entities, expand the financing channels of enterprises in an all-round way." Debt financing is an important source of funds for the external financing of Chinese companies, so the factors that affect the cost of debt financing have also become an important topic in the field of corporate finance. Theoretically speaking, the main reason why companies need to be subject to financing constraints is the asymmetry of internal and external information. In the case of information asymmetry, external creditors will demand a higher premium due to the consideration of information costs and default costs. To compensate for risks, companies need to bear higher debt financing costs.

In recent years, with the improvement of information technology and the popularization of the Internet, as a fourth power independent of legislation, administration, and justice, the media's supervisory role in the capital market has become increasingly prominent, it has become an important external force that affects the operation and management decisions of listed companies. In July 2018, a number of media successively reported the news that Changchun Changsheng rabies vaccine production records were falsified and 250,000 DPT vaccines were sold to Shandong, which immediately triggered intense discussions among netizens and high social attention. On October 16, the illegal production of vaccines caused the relevant departments to impose administrative penalties on Changchun Changsheng, such as revocation of drug production licenses and fines. On December 11, the Shenzhen Stock Exchange planned to delist the company's stocks in a major illegal manner. The media collects and processes information to make information publicly available, which saves information users the cost of information retrieval and collection, and reduces the degree of information asymmetry. Secondly, as a company's external governance force, the media plays the role of exposing financial fraud, improving corporate governance defects, and improving corporate performance. Media reporting on corporate-related information can alleviate the information asymmetry between companies and investors. The problem helps investors to effectively supervise the relevant decision-making of the

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enterprise management, which is conducive to the alleviation of the entrusted-agent problem.

Related research shows that the media as an informal governance mechanism will inevitably affect the financial decision-making of corporate stakeholders, but there are few related studies on whether media attention affects the debt financing costs of listed companies. This article aims to examine in depth whether media attention affects the cost of debt financing; whether it will increase or reduce the cost of debt financing for companies; divide media reports into non-negative media reports and negative media reports according to their substance, and Explore the difference between the two effects on corporate debt financing costs. The media is concerned about whether it will have a consistent impact on the debt financing costs of companies with different property rights.

2 PRIOR LITERATURE AND HYPOTHESIS DEVELOPMENT

Empirical data proves that company characteristic factors, corporate governance factors and macro-environmental factors can all have a significant impact on a company's debt financing costs. The media is regarded as the fourth power independent of legislation, administration, and judiciary, which to a certain extent, supplements the lack of the system. On the whole, the media has two major functions: information intermediary and corporate governance. First, the media organizes, analyzes, processes, and releases the collected information to the public, thereby reducing information costs for information users and reducing information asymmetry. Secondly, the media also has corporate governance functions such as exposing accounting scandals, protecting investor rights, and curbing financial restatements and financial fraud (Yang, Kong, 2017, Wu, et al., 2019). Existing research results show that the media play a corporate governance function mechanism in at least three aspects, namely: traditional supervision mechanism, reputation mechanism and market pressure mechanism.

Based on the theory of information asymmetry, reputation theory, and principal-agent theory, this paper divides media reports into different types of media reports according to the essence of the report content, and discusses the influence of media attention on the cost of corporate debt financing. According to the information asymmetry theory, the creditor cannot fully grasp the debtor's true production and operation status in the borrowing and lending relationship, so there is a problem of information asymmetry between the two parties. The study of Fang and Peress found that information friction can be alleviated by media reporting on information (Fang, Peress, 2009). The media plays its role as an information intermediary, collecting and organizing corporate information through professional means, and passing the information to the market. Through the media's disclosure of relevant information, creditors can have a more comprehensive grasp of the company's investment and operation status, return the degree of information asymmetry to a lower level, and promote creditors to improve the accuracy when judging the required risk reward, which is more in line with the real situation of the enterprise. From a realistic point of view, media reports can be divided into non-negative and negative reports according to the type of report, while non-negative media reports can be divided into positive and neutral reports. Media's positive reports on listed companies signal to creditors that the company's business is in good condition and reduce creditors' expectations of the risks they face. At this time, creditors will demand a lower risk compensation premium, and thus the cost of debt financing will be reduced. Media's neutral reports on listed companies can enable investors to have a more in-depth and comprehensive understanding of the true investment and operating conditions of the company, thereby reducing the cost of information that investors need to pay. Therefore, non-negative media reports reduce the investment risks faced by creditors, and are beneficial for listed companies to obtain debt financing with low borrowing interest rates and a long term structure. However, when the media reports a lot of negative news about listed companies, it will send a bad signal to the capital market, the creditors will face an increased risk of default, and the financing constraint dilemma of enterprises will be further aggravated.

From the reputation theory, reputation, as an intangible asset of a company, will bring unexpected benefits to the company. Therefore, companies and managers are paying more and more attention to establishing a good image. Generally, creditors will assess the risks they face based on the reputation of the company. Compared with companies with poor reputation, the risk of default by a company with a good reputation is lower. Therefore, creditors are more inclined to sign a loan agreement with a company with a good reputation. Positive media reports help companies build a good reputation, deepen stakeholders' good impressions of the company, and enhance the company's influence and competitiveness. Media reports on corporate neutral news, through these information fund providers will have a more diversified understanding of the financial status and operating results of the company, and enhance the company's reputation. Therefore, non-negative media reports can enable companies to establish a good image and have a good reputation, thereby reducing the risk compensation required by creditors for the company's default risk and moral hazard, and reducing the company's debt financing costs. Negative media reports of companies will damage the company's reputation, destroy the company's image, and reduce the company's core competitiveness. Banks and other financial institutions will lower the company's credit rating, and creditors will face increased investment risks, which will require higher the risk-reward of the company has intensified the debt financing constraints of enterprises. Based on the above analysis, this article proposes the following hypotheses:

H1: Media reports are negatively related to the debt financing costs of listed companies.

H1a: Non-negative media reports are negatively related to the debt financing costs of listed companies.

H1b: Non-negative media reports are negatively related to the debt financing costs of listed companies.

The conventional wisdom holds that compared with private enterprises, state-owned enterprises are often easier to obtain bank loans because of their property rights advantages, and private enterprises are often subject to financing constraints. However, the study of Wang Jiating and Zhao Liang found that the cost of capital of state-owned enterprises is higher than that of non-state-owned enterprises (Wang and Zhao 2010). With the continuous improvement of my country's financial system and the gradual marketization of competition in the financial industry, enterprises can obtain financial support from more channels. In order to ensure their own profits, banks and other financial institutions will pay more attention to the company's operating conditions and governance levels when issuing loans. Compared with private enterprises, state-owned enterprises generally have poor corporate governance and serious information asymmetry. The media's disclosure of company-related information will reduce the degree of information asymmetry, so that creditors have a deeper understanding of the company's operating conditions, and the company's debt financing costs will be reduced. The media reports on the non-negative news of state-owned enterprises, so that creditors have confidence in the company's development prospects and solvency, and can establish a good corporate image. Under the same circumstances, banks and other financial institutions provide financial support to state-owned holding companies. The risk of default is low. And when there are negative media reports from companies, banks and other financial institutions will not be different due to the nature of corporate property rights when assessing the risks they will face and the negative impact of the risks. Therefore, negative media in companies with different property rights. There is no significant difference in the impact of reports on debt financing costs. The following hypothesis is proposed:

H2a: Compared with state-owned enterprises, private enterprises will weaken the role of non-negative media reports in reducing debt financing costs.

H2b: Whether it is a state-owned enterprise or a private enterprise, there is no significant difference in the impact of negative media reports on the cost of debt financing.

3 RESEARCH DESIGN AND SUMMARY STATISTICS

3.1 Sample and Data Sources.

This article selects my country's A-share SME board listed companies from 2014 to 2018 as the research object, and selects the initial sample according to the following criteria: (1) Exclude the research sample of the financial industry. (2) Exclude ST or *ST research samples. (3) Exclude the research samples that are simultaneously listed on B shares and H shares. (4) Excluding research samples with abnormal debt financing costs and missing data. After screening, the paper obtained a total of 2519 sample observations. This article performs 1% quantile Winsorize processing on all continuous variables to avoid the influence of outliers. The media report data in this article comes from CNKI's Full-text Database of China's Important Newspapers, and other financial data comes from the CSMAR database.

3.2 Variable Definitions

(1) The cost of corporate debt financing is measured by the ratio of financial expenses to the total annual average debt.

(2) Usually company-related news reported through the media will always have an impact on the company's next debt financing cost. Media attention is measured by LN (1 + media coverage of the previous year). When distinguishing the nature of media coverage, it will include the best of "violation, illegality, breach of contract, manipulation, false/column/addition, fraud, fraud, bribery", etc. Reports with negative keywords are defined as negative media reports. Positive reports and neutral reports that are not negative reports are non-negative media reports.

(3) According to Luo Jinhui related research on debt financing (Luo 2012), this article selects Age (Age), Profitability (ROE), Growth (Growth), Asset-liability Ratio (Lev), Interest Protection Multiple (Intcov), Equity Concentration (First), Company size (Size) and fixed asset ratio (Tangible) are used as control variables.

3.3 Model Setting

In order to verify the research hypothesis of this article, this article constructs the following empirical model.

$$Cost=\beta0+\beta1Media+controls+\varepsilon \qquad (1)$$

3.4 Summary Statistics

From the descriptive statistical results in Table 1, we can see that the debt financing constraints faced by listed companies in my country are significantly different, and the gap is large. The average amount of media coverage was 2.69, non-negative media coverage was 2.4, and negative media coverage was 1.95, reflecting the tendency of the Chinese media to report good news but not bad news. The average value of property rights is 0.151, which indicates that 15.1% of the enterprises in the sample selected in this paper are state-owned enterprises.

Table 1: Descriptive statistics.

Variable	Mean	Std.	Minimum	Maximum
Cost	0.0241	0.0168	0.000337	0.0914
Media	0.576	0.706	0	2.69
Media1	0.457	0.615	0	2.4
Media2	0.177	0.422	0	1.95
State	0.151	0.358	0	1
Age	18.2	4.99	10	36
ROE	0.0506	0.102	-0.531	0.252
Tangible	0.225	0.141	0.00227	0.628
Size	22.1	0.885	20.3	24.5
First	0.323	0.133	0.105	0.703
Growth	0.295	0.632	-0.593	3.98
Intcov	24.6	80.3	-26.4	640
Lev	0.436	0.169	0.102	0.823

4 EMPIRICAL ANALYSIS

4.1 Media Coverage and Debt Financing Costs

Empirically test the relationship between media coverage, non-negative media coverage, negative media coverage and debt financing. It can be seen from Table 2 that the regression coefficient of media coverage on debt financing cost is negative, which is statistically significant at the 1% confidence level. It shows that the higher the media's attention to the company, the deeper the creditors' grasp of the company's investment and operation status, the improvement of information asymmetry, the improvement of information transparency, the reduction of the cost of creditors' access to information, the alleviation of debt financing constraints. Therefore, the hypothesis H1 has been effectively verified. Non-negative media reports have a negative correlation with debt financing costs, and it is significant at the 1% level, which is in line with the expectations of hypothesis H1a; the regression coefficient of negative media reports on debt financing costs is significantly positive, which supports hypothesis H1b.

Table 2: Media coverage, non-negative media coverage and negative media coverage and debt financing costs.

	Media coverage	Non-negative media coverage	Negative media coverage
Media	-0.00188***		
	(-3.923)		
Media1		-0.00188***	
		(-3.438)	
Media2			0.00677***
			(9.410)
Age	-0.000263	-0.000253	-2.18e-05
	(-0.971)	(-0.933)	(-0.0831)
ROE	-0.00446	-0.00420	-0.00337
	(-1.300)	(-1.222)	(-1.002)
Tangible	0.0296***	0.0296***	0.0297***
	(5.507)	(5.510)	(5.648)
Size	-0.00215**	-0.00213**	-0.00242**
	(-2.037)	(-2.009)	(-2.352)
First	-0.00482	-0.00466	-0.00182
	(-0.691)	(-0.667)	(-0.266)
Growth	-0.000187	-0.000179	-0.000187
	(-0.346)	(-0.331)	(-0.353)
Intcov	-3.75e-05***	-3.73e-05***	-3.61e-05***
	(-8.307)	(-8.262)	(-8.150)

Lev	0.0270***	0.0267***	0.0264***
	(7.117)	(7.039)	(7.105)
Constant	0.0619***	0.0611***	0.0604***
	(2.940)	(2.891)	(2.928)
N	2,519	2,519	2,519
R^2	0.112	0.110	0.146

4.2 Media Coverage on the Impact of Debt Financing Costs of Companies with Different Property Rights

When State=1, the controller type of the listed company is a state-owned enterprise; when State=0, the controller type of the listed company is a private enterprise. The model (1) is tested in groups, and Table 3 is obtained. The research in column (1) and (2) shows that whether it is a state-owned enterprise or a private enterprise, non-negative media reports have a negative impact on the cost of debt financing. The negative impact on the cost of debt financing is greater than that of private enterprises, which supports the expectations made by hypothesis H2a. The research results in columns (3) and (4) show that in state-owned or private enterprises, negative media reports will aggravate the debt financing constraints of the enterprises and increase the debt financing costs of the enterprises, and the negative media reports have all the effects on the debt financing costs. The 1% confidence level is significant. Therefore, in state-owned enterprises or private enterprises, the impact of negative media reports on the cost of debt financing is not very different, which supports the expectations made by hypothesis H2b.

Table 3: The Impact of Media Reports on the Debt Financing Cost of Enterprises with Different Property Rights.

	State=1	State=0	State=1	State=0
	(1)	(2)	(3)	(4)
Media1	-0.00794***	-0.000925*		
	(-3.951)	(-1.721)		
Media2			0.0171***	0.00504***
			(6.589)	(7.085)
Constant	0.0814	0.065***	0.129	0.060***
	(0.884)	(3.184)	(1.469)	(2.984)
Controls	YES	YES	YES	YES
N	381	2,138	381	2,138
R^2	0.116	0.128	0.196	0.154

5 CONCLUSION

This article selects 709 listed A-share companies on the small and medium board from 2014 to 2018 as the research objects, and studies the impact of media reports on the cost of corporate debt financing, from the relationship between media coverage and debt financing costs, and media reports under different keynotes. The relationship between debt financing costs and the impact of property rights on the relationship between media reports and debt financing costs have been studied.

The research conclusions of this article are as follows: (1) Media reports on companies can help alleviate the problem of information asymmetry between borrowers and lenders, improve information transparency, thereby alleviating debt financing constraints faced by companies, that is, as the amount of media reports increase, companies' debt financing costs can be significantly reduced. (2) Non-negative media reports can send a positive signal to the market, and can establish a good reputation, which can alleviate and reduce the debt financing costs of enterprises; while negative media send a bad signal to the market, help creditors understand the business risks of enterprises, and help creditors know the moral hazard they face through reputation mechanisms, so creditors will demand higher premiums to compensate for the risks. (3) Whether it is a state-owned enterprise or a private enterprise, non-negative media reports have a negative impact on debt financing costs. Among state-owned enterprises, non-negative media reports have a greater negative impact on debt financing costs than private enterprises. (4) In state-owned enterprises or private enterprises, the impact of negative media reports on debt financing costs is not very different.

At the same time, this study provides important decision-making references for our government, enterprises and other social groups, including the following points: (1) Listed companies should strengthen communication with the media, strengthen the supervision of distorted media reports, and avoid news reports negative impact on the company. (2) Listed companies should use the supervision function of the media and the role of corporate governance to encourage companies to establish a good reputation, improve corporate governance, improve management, strive to reduce operating risks, and make reasonable and effective investment management decisions. (3) Banks and other financial institutions should comprehensively consider the impact of media coverage when issuing loans to enterprises. Actively communicate with the media in order to obtain information related to the loan applicant in a timely manner, save the collection of information, and avoid misjudgments due to information asymmetry.

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