Original Paper

Does the Quality of CSR Information Disclosure Affect the Speed of Capital Structure Adjustment?—Evidence from Chinese Listed Companies

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Abstract

This paper takes the balanced panel data of 376 A-share listed companies in 2010-2016 as a sample, and makes the quality of Corporate Social Responsibility (CSR) information disclosure as the research entry point. Based on the two-stage method, this paper tests the relationship between the quality of CSR information disclosure and the speed of capital structure adjustment of Chinese listed companies by using the difference-GMM. Empirical research shows that the higher the quality of CSR information disclosure, the faster the rate of capital structure adjustment. However, the speed of capital structure adjustment of non-state-owned enterprises is more sensitive to the quality of CSR information disclosure than that of state-owned enterprises.

Keywords

CSR, information disclosure quality, capital structure, adjustment rate

1. Literature Review

The theory of capital structure is an essential subject that the financial circles pay close attention to. Modigliani and Miller (1958) developed the original MM theory, which held that the capital structure of a firm was independent of its market value. Since this theory was first established under a series of strict assumptions, many scholars have revised the MM theory from different ways and further put forward the trade-off theory, market timing theory, and financing priority theory. Although there is no unified conclusion on the issue of whether the company has the optimal capital structure, scholars have found that the company does have a target (optimal) capital structure through a lot of empirical

research (Titman & Wessels, 1988; Graham, 1996; Hovakimian et al., 2004; Strebulaev, 2007; Harford et al., 2009; Lu et al., 1998; Feng & Xin, 2000; Lu & Han, 2001).

Because of the uncertainty of the internal and external environment, the capital structure is not always in the optimal state. Hovakimian et al. (2001) and Lööf (2004) argued that this could reduce the firm value, so that even with adjustment costs, companies have the incentive to adjust their capital structure to achieve the optimal levels. The return and cost of adjustment determine the rate of the adjustment capital structure. When the adjustment cost is zero, the capital structure can be adjusted to the optimal level immediately. In contrast, when adjustment costs are infinite, companies have no incentive to change their capital structure. At present, many scholars have studied the company's capital structure adjustment behavior. Faulkender (2008) finds that firms focus on changing their capital structure because of the cost of adjustment (imposed by the macro-environment). Wu et al. (2017) pointed out that when the cost of modification is decreasing, the company adjusts its capital structure faster.

Besides, the existing literature from different points of entry to study the impact of the speed of capital structure adjustment factors, this paper summarized these factors into the following three aspects. First, the company's institutional background, such as the macro-economic environment, the legal system, the degree of financing constraints, and market-oriented process. The more perfect the system background, the smaller the corresponding market friction, the lower the transaction cost, the faster the speed of adjustment. Secondly, the characteristics of the company itself is also an important factor affecting its dynamic change. From the perspective of property rights, Zhao and Wang (2011) found that the existence of soft budget constraints makes the adjustment speed of state-owned enterprises and non-state-owned enterprises significantly different. Also, the size of enterprises, growth, and ownership concentration will have a particular impact on the speed of capital structure adjustment. Third, the agency problem will also affect the rate of capital structure adjustment. Tsyplakov and Titman (2007) found that the more serious the agency problem between shareholders and creditors, the slower the pace of capital structure adjustment. Sheng et al. (2016) found that there was a positive correlation between the degree of executive stock incentive and the rate of capital structure adjustment.

In view of the review of the existing literature, this paper intends to make contributions in the following two aspects: First, to expand the research framework of the company's own characteristics on the speed of capital structure adjustment, and to take the quality of CSR information disclosure as the entry point to examine the impact of CSR information disclosure quality on the speed of capital structure adjustment. Secondly, it analyzes whether the difference of ownership will affect the relationship between the quality of CSR information disclosure and the rate of capital structure adjustment.

The structure of the following parts of this paper is as follows: The second part is the theoretical analysis and research hypothesis; the third part is the dynamic adjustment model of capital structure; The fourth part carries on the corresponding explanation to the variable; The fifth part is the data processing and the empirical analysis; The sixth part is the conclusion and the insufficiency of this paper.

2. Theoretical Analysis and Research Hypothesis

In recent years, with the development of economy and society, the public pays more attention to CSR. At present, only a few scholars study the relationship between CSR information disclosure quality and capital structure. Welker and Hutchinson (1999) found that corporate disclosure of social responsibility performance can reduce the predictive risk of capital markets, thus reducing the cost of capital market financing. Verrecchia (2001) believes that CSR information, as a kind of market information, can reduce the information asymmetry and transaction costs between different trading entities and obtain external financing at relatively low cost. According to Bebington (2008), the purpose of CSR disclosure is to establish communication channels with investors, enhance the two-way interaction and recognition between enterprises and investors, and gradually build up a positive corporate image and enhance corporate reputation.

To sum up, the impact of CSR on capital structure manifests in the following two aspects: On the one hand, CSR can increase the availability and accessibility of corporate finance and reduce the cost of corporate finance to a certain extent by reducing the information asymmetry with the market. On the other hand, disclosure of CSR information can help enterprises to establish a positive corporate image, reduce or eliminate investors' concerns, and make investors more comfortable to lend funds to enterprises. The impact on the speed of capital structure adjustment mainly lies in that disclosure of the performance of CSR to the market can reduce the information bias of investors, improve the liquidity of stocks and the convenience of corporate equity financing, thereby increasing the speed of adjustment (Branco & Rodrigues, 2008; Dhaliwal et al., 2009; Ghoul et al., 2011; Sun & Zhou, 2012).

Based on the above literature and theoretical analysis, this paper proposes a **hypothesis: The higher the quality of CSR information disclosure, the faster the speed of capital structure adjustment.** Besides, this paper will consider the impact of ownership on the capital structure adjustment speed, further validates this article's research conclusion.

3. Construction of Dynamic Adjustment Model of Capital Structure

3.1 Dynamic Adjustment Model of Capital Structure

At present, with the development of capital structure and related theories, the dynamic adjustment model of capital structure has been quite perfect. So, as most scholars have done, this paper refers to Hovakimian et al. (2004), and set the following criteria for a dynamic adjustment model of the capital structure.

$$Lev_{i,t} - Lev_{i,t-1} = \delta_{i,t}(Lev_{i,t}^* - Lev_{i,t-1}) + \varepsilon_{i,t} \tag{1}$$

In formula (1), $Lev_{i,t}$ represents the capital structure of the enterprise at the end of the t period; $Lev_{i,t-1}$ represents the capital structure of the enterprise at the end of the $t-1$ period; $Lev_{i,t}^*$ represents the target capital structure of the enterprise at the end of the t period; $\delta_{i,t}$ represents the speed of adjustment of the capital structure; and $\varepsilon_{i,t}$ represents the stochastic disturbance.

In this model, the main focus is on the speed of adjustment. (1) $\delta_{i,t} = 0$ states that the cost of adjusting the capital structure of the enterprise was far higher than the income, and that the enterprise had no incentive to change the capital structure, so that the enterprise would maintain the capital structure of the previous year; (2) $0 < \delta_{i,t} < 1$ states that an enterprise will make a partial adjustment of its capital structure by weighing the costs and benefits of the modification, when the capital structure of the enterprise is still in a suboptimal state; (3) $\delta_{i,t} = 1$ states that the capital structure of an enterprise is always in the optimal state and don't need adjustment; (4) $\delta_{i,t} > 1$ states that an enterprise over adjusts its capital structure, which makes its capital structure deviate from the optimal state; (5) $\delta_{i,t} < 0$ states that enterprise over alters its capital structure in the opposite direction.

3.2 Fitting Model of Target Capital Structure

Since the enterprise's target capital structure Lev is always in a state of change and cannot be directly observed, it is now standard practice in the academic community to select the appropriate variables to fit the target capital structure, and the method is robust. Thus, this paper refers to Hovakimian et al. (2004), and Flannery and Ragan (2006) used a linear form to fit the target capital structure.

$$Lev_{i,t}^* = \alpha Macro_t + \beta X_{i,t} + \varepsilon_{i,t} \tag{2}$$

In formula (2), $Macro_t$ represents the macro-economic index of the t period; $X_{i,t}$ represents the characteristic index of the enterprise in the t period; $\varepsilon_{i,t}$ represents the stochastic disturbance.

3.3 Model of the Speed of Capital Structure Adjustment

The problem discussed in this paper is the influence of the quality of CSR disclosure on the speed of capital structure adjustment. Therefore, to get its real effect, this paper, referring to He's (2010) practice, sets the speed of adjustment as:

$$\delta_{i,t} = \gamma_0 + \gamma_1 CSR_{i,t} \tag{3}$$

In formula (3), $CSR_{i,t}$ represents the quality of CSR information disclosure in the t period.

3.4 Regression Model Setting

To be able to make empirical analysis, this paper has simplified the formula (4) by substituting the equation (2) and (3) into the equation (1), as shown in the following formula, and simultaneously estimates α、β and γ.

$$\begin{aligned} Lev_{i,t} = \quad & (1 - \gamma_0)Lev_{i,t-1} - \gamma_1 CSR_{i,t} \times Lev_{i,t-1} \\ & + \alpha(\gamma_0 + \gamma_1 CSR_{i,t})Macro_{i,t} + \beta(\gamma_0 + \gamma_1 CSR_{i,t})X_{i,t} + \varepsilon_{i,t} \end{aligned}$$

The stochastic disturbance $\varepsilon_{i,t} = u_i + v_{i,t}$, and $u_i \sim iid(0, \sigma_u^2)$, $v_{i,t} \sim iid(0, \sigma_v^2)$. Since in formula (4), $Lev_{i,t-1}$ is the explanatory variable, there is a correlation with u_i. Therefore, to overcome the problem of individual heterogeneity and endogeneity, this paper will use Arellano & Bond's first-order Generalized method of moments method (GMM) to carry on regression analysis to formula (4).

In particular, in formula (4), the coefficient of $Lev_{i,t-1}$ is $(1 - \gamma_0)$, and the coefficient of $CSR_{i,t} \times Lev_{i,t-1}$ is $(-\gamma_1)$. Because the speed of adjustment is $\delta_{i,t} = \gamma_0 + \gamma_1 CSR_{i,t}$, it is necessary to convert

$(1 - \gamma_0)$ to γ_0, and convert $(-\gamma_1)$ to (γ_1), and in this way can we derive the correct speed of capital structure adjustment.

4. Data Selection and Variable Description

4.1 Sample Selection and Data Source

In this paper, 376 A-share listed companies are selected as the research object (their listing times are before 2010), and the research period is 2010-2016 (total seven years), and the sample is selected according to the following principles:

(1) Excluding listed companies with missing or incomplete data;

(2) Excluding financial, insurance and ST, *ST and PT listed companies;

(3) Including listed companies that have issued CSR reports for seven consecutive years;

(4) Exclude the listed companies with extreme data such as a total debt ratio of less than 0 or more than 100%.

After screening, we finally get the balanced panel data of 376 listed companies in 15 industries, including 260 state-owned companies and 116 non-state-owned companies. The data sources of this paper include: (1) corporate financial data come from CCER and CSMAR database, some missing values come from their annual report; (2) CSR information disclosure quality data come from Rankins CSR Ratings (RKS) database; (3) industry-classify data from SEC official website; (4) macroeconomic data from National Bureau of Statistics. All the estimations in this paper are implemented by StataSE 15.0 software.

4.2 Setting of Variables

4.2.1 Measurement of Capital Structure

There are three ways to measure the capital structure: The ratio of short-term liabilities to total assets, the ratio of long-term debts to total assets, and the ratio of total liabilities to total assets. According to Yu et al. (2012), listed companies mainly show the characteristics of short-term financing, and most listed companies tend to recycle short-term debt and long loan short repayment. Therefore, this paper refers to their practices to choose the ratio of total liabilities to total assets to measure the capital structure. At the same time, based on China's particular equity structure and the bond market is developing, getting more accurate results, this paper will choose the book capital structure as the measurement.

4.2.2 Fitting Variables of the Target Capital Structure

As the target capital structure of the company has been proved to be related to the macro environment and the internal features of the company, this paper will select the relevant fitting variables from the macroeconomic and corporate characteristics.

(1) Macroeconomic Indicators

Based on Levy and Hennessy (2007), Jiang (2011), here are three macro-economic indicators to characterize the company's target capital structure.

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① GDP Growth Rate

GDP growth rate reflects a country's overall macroeconomic situation, and can directly affect the company's financing decisions. In general, when the economy is in the expansion cycle, companies tend to use equity financing instead of debt financing to reserve some of the debt space. However, Pan and Miao (2010) found through empirical research that during China's economic boom, commercial banks have blind expansion and other phenomena, leading to an increase in the proportion of corporate debt financing, which leads to the upgrading of capital structure.

② Inflation Rate

When the inflation rate is high, enterprises are faced with the situation of lack of funds and financing difficulties. It is more difficult for them to obtain equity financing. They can only solve the financing difficulties through debt financing. Therefore, the relationship between the expected inflation rate and capital structure is a positive correlation.

③ Money Supply Growth

China's definition of money supply M1=M0 + corporate demand deposits + Institutional Group Force deposits + Credit Card type deposits held by individuals, after deducting M0 from M1 Most of the rest is corporate deposits (which also include bank loans to companies). Therefore, this paper uses (M1-M0) as an index to measure the growth rate of the money supply. When this index rises, it shows that corporate deposits increase rapidly, the demand for debt financing decreases, and the capital structure decreases.

(2) Corporate Characteristics Indicators

Referring to Fama and French (2002), Drobetz and Wanzenried (2006), and Sheng (2016), the following five organizational characteristic variables are selected to describe the target capital structure.

① Growth

There are different views on the relationship between growth and capital structure. One aspect is that the higher the growth, the greater the incentive for managers to increase profits by controlling leverage, and the other aspect is from the vantage point of financing, that is, when a company's investment exceeds the company's in-house capital Managers are more likely to finance themselves through debt.

② Company Size

Typically, larger companies have greater risk diversification and a lower risk of bankruptcy, making it easier to borrow in the form of debt.

③ Profitability

Companies with higher profitability tend to operate at lower levels of capital structure, as higher returns make them more inclined to use endogenous capital to manage and invest.

④ Ownership structure

He (2017) found through research that higher ownership concentration aggravated problems such as company insider control and moral hazard Thus further amplifies the management's Equity Agency cost (the agency cost caused by the conflict of interest between shareholders and managers). Therefore,

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when the ownership concentration increases, to reduce the agency cost, the company will choose the way of debt financing, to improve the capital structure.

⑤ Ability to Mortgage Assets

Tangible assets with collateral value can provide more security for debt financing and reduce creditors' potential losses in bankruptcy, so the more tangible assets a company has, the more debt financing it has.

Table 1 shows the definition and expected sign of variables.

Table 1. Variables Definition

Indicator Category	Name	Symbols	Expected Sign	Definition
Macroeconomic （Macro）	GDP Growth Rate	GDP	$+/-$	$\dfrac{\text{GDP Increment}}{\text{Previous Year's GDP}}$
	Inflation Rate	CPI	$+$	Consumer Price Index Growth Rate
	Money Supply Growth	M	$-$	(M1-M0) Year-over-Year Growth Rate
Corporate Characteristic （X）	Growth	Tobin Q	$+/-$	$\dfrac{\text{Enterprise Market Value}}{\text{Replacement Cost}}$
	Company Size	SIZE	$+$	Natural Log of Total Asset
	Profitability	EPS	$-$	Earnings per Share
	Ownership Structure	TOP	$+$	Shareholding ratio of the largest shareholder
	Ability to Mortgage Assets	TANG	$+$	$\dfrac{\text{Tangible Asset}}{\text{Total Asset}}$

4.3 Measurement of the Quality of CSR Information Disclosure

The quality of CSR information disclosure used in this paper comes from RKS (an authoritative third-party rating agency). RKS mainly from the industry, content, technology, and integrity of these four levels (a total of 15 indicators and 63 secondary indicators) of corporate disclosure of social responsibility report evaluation. The evaluation system of RKS is set up according to the international standard of CSR (ISO26000). It has been quoted by the Journal of Economic Research and Management World, and the data have authenticity and reliability.

5. Empirical Analysis

5.1 Descriptive Statistical Analysis

Table 2 reports descriptive statistics of the book capital structure of 376 sample corporations for each accounting year.

Table 2. Descriptive Statistics of Capital Structure

Accounting Year	Mean	Median	Standard Deviation	Minimum	Maximum
2010	50.52	51.50	18.54	1.58	85.67
2011	51.46	53.51	18.74	3.89	86.70
2012	52.42	54.32	18.63	4.45	86.66
2013	52.69	55.10	19.61	5.63	97.17
2014	52.51	55.20	19.89	3.55	95.23
2015	51.56	53.05	20.05	3.41	94.11
2016	51.05	54.14	19.95	4.62	93.43
Total (Average)	51.74	53.83	19.35	1.58	97.17

As can be seen from Table 2, the average and median of capital structure in 2010-2016 are both higher than 50%, indicating that the debt financing ratio of sample corporations is slightly higher than the equity financing ratio, which is consistent with the theory of superior order financing. Also, it can be seen from the minimum and maximum that there are significant differences in capital structure among different corporations.

Table 3. Descriptive Statistics of CSR Information Disclosure Quality

Accounting Year	Mean	Median	Standard Deviation	Minimum	Maximum
2010	34.81	31.15	13.01	16.12	64.17
2011	36.78	32.69	13.20	15.12	81.88
2012	38.65	35.08	12.22	18.48	82.44
2013	40.42	37.00	12.10	19.70	87.95
2014	43.25	40.25	12.15	19.98	87.18
2015	42.86	39.97	12.16	20.63	86.64
2016	43.59	40.65	12.07	20.93	86.55
Total (Average)	40.05	36.92	12.81	15.12	87.95

Table 3 reports descriptive statistics on the quality of CSR information disclosure of 376 sample enterprises in each accounting year. It can be seen that the average score of the quality of CSR information disclosure in 2010-2016 is 40.05, the overall quality of disclosure is weak, and there are significant differences. However, from the perspective of development, we can see that the quality of CSR information disclosure is improving year by year.

Table 4. Descriptive Statistics Based on Industry Classification

Industry Classification	# of Corp.	Capital Structure		Quality of CSR Information disclosure	
		Mean	Std. Dev	Mean	Std. Dev
Synthesis	3	49.09	19.19	33.43	12.65
Construction	10	77.41	7.05	45.85	16.27
Mining	18	49.36	15.83	50.16	17.12
Manufacturing	209	49.09	19.31	38.92	11.48
Real Estate	30	67.60	11.96	36.04	11.80
Accommodation and Catering	1	29.94	7.33	41.21	5.39
Wholesale and Retail	19	60.47	17.86	39.61	11.68
Health and Social Work	2	37.69	20.21	44.82	9.55
Agriculture, Forestry, Animal Husbandry and Fishery	5	43.92	16.36	30.56	8.05
Leasing and Business Services	4	50.02	12.76	33.64	7.40
Culture, Sports, and Entertainment	2	31.37	4.79	49.09	19.19
Transportation, Warehousing, and Postal Services	28	47.86	18.85	45.62	16.58
Water, Environment and Public Facilities Management	1	28.84	8.37	41.59	9.43
Information Transmission, Software, and Information Technology Services	15	38.63	16.18	40.68	10.35
Production and Supply of Electricity, Heat, Gas, and Water	29	57.69	14.67	41.40	12.10
Total	376	51.74	19.35	40.05	12.81

Table 4 provides descriptive statistics on capital structure and CSR disclosure quality based on the CSRC industry classification guidelines. From the view of capital structure, the top three industries are construction industry, real estate industry, wholesale and retail industry, among which the difference of capital structure (Standard Deviation) is the smallest. The industries with the smallest capital structure are water conservancy, environment, and public facilities management, but the number of sample enterprises is only 1. In terms of CSR disclosure quality, the top three industries are mining, culture, sports and entertainment, and construction, but the standard deviation shows that of these three industries, the quality of CSR information disclosure varies greatly among enterprises, while the lowest quality of CSR information disclosure is in agriculture, forestry, animal husbandry and fishery.

Table 5. Description Statistics of Other Variables

	GDP	CPI	M	Tobin Q	SIZE	EPS	TANG	TOP
Mean	8.11	2.76	3.34	1.81	23.25	0.48	94.44	0.39
Median	7.80	2.60	2.10	1.44	23.11	0.35	96.71	0.39
Std. Dev	1.35	1.21	6.16	1.17	1.49	0.68	9.19	0.16
Minimum	6.70	1.40	-5.90	0.70	19.54	-5.57	18.47	0.00
Maximum	10.60	5.40	13.30	15.11	28.51	7.00	100.00	0.86

Table 5 shows the descriptive statistics of other variables, showing that there are considerable differences in the size, profitability, growth, and asset collateral capability of different listed companies.

5.2 The Fitting of Target Capital Structure

Although this paper has "internalized" the target capital structure through formula (4), that is, α、β and γ are directly estimated by the equation (4). But the premise of "internalization" is that macroeconomic indicators and corporate characteristic variables can fit the target capital structure properly, so it is necessary to test the fitting degree of equation (2). Here, the article referred to He (2010) for the following test.

Table 6. Fitting Result of Target Capital Structure

Independent Variable	Expected Effect	Pool Regression	Fixed-Effect Model
GDP	$+/-$	1.753***	1.307***
		(0.000)	(0.000)
CPI	$+$	-1.111***	-0.757***
		(0.000)	(0.000)
M	$-$	-0.123***	-0.263***
		(0.004)	(0.000)
Tobin Q	$+/-$	-3.948***	0.495
		(0.000)	(0.102)
SIZE	$+$	6.005***	9.155***
		(0.000)	(0.000)
EPS	$-$	-6.525***	-3.457***
		(0.000)	(0.000)
TANG	$+$	0.171***	-0.063
		(0.008)	(0.441)
TOP	$+$	-13.454***	6.050
		(0.005)	(0.437)
Constant		-99.206***	-164.359***
		(0.000)	(0.000)
Observations		2,632	2,632
R-squared		0.370	0.259

Note. The P-statistic based on White (1980) heteroscedasticity adjustment is shown in parentheses, ***, ** and * are statistically significant at 1%, 5%, and 10% significance levels, respectively.

Table 6 shows the fitting results of equation (2), with the first column showing the symbols of the explanatory variables; the second column showing the expected direction of impact obtained by combing the previous literature; the third column showing the estimated results of performing the pool regression (Note 1), and individual heterogeneity is not considered in this regression model; the fourth column shows the estimates for the fixed-effect model (Note 2) (with individual heterogeneity taken into account). Combined with the results of mixed regression and fixed-effect models, most of the explanatory variables have the same sign as expected (Note 3), and are statistically significant at 1% significance level. Besides, referring to the standards of Jiang et al. (2008) and Kuang (2016), it can be seen that the impact of macroeconomic indicators and corporate characteristic variables selected by the two regression models on the target capital structure is valid and significant can be used as a basis for further analysis.

5.3 The Impact of the Quality of CSR Information Disclosure on the Speed of Capital Structure Adjustment

Next, this paper will study the impact of CSR information disclosure quality on the speed of capital Structure Adjustment, the specific steps are as follows: refer to He (2010) and Gu (2013), first use the difference GMM estimation formula (4), to test the impact of CSR information disclosure quality on the speed of capital structure adjustment, and then to further distinguish state-owned and non-state-owned shares by property rights, using the same GMM estimation (4), to test whether the impact of CSR information disclosure quality on the speed of capital structure adjustment will change because of the ownership.

Table 7 shows the regression results of the difference GMM method. A fundamental assumption of the differential GMM method proposed by Arellano and Bond (1991) is that there is no autocorrelation between the perturbations in equation (4). Therefore, it is reasonable to use the difference GMM method if there is only first-order autocorrelation but not second-order autocorrelation. The AR (2) P values associated with this test are shown in Table 7

Table 7. Regression Result

	Full Sample	Sub Sample	
		State-Owned	Non-State-Owned
Lev_{t-1}	0.906*** (0.000)	0.865*** (0.000)	0.808*** (0.002)
$CSR_t \times Lev_{t-1}$	-0.009** (0.027)	-0.010** (0.016)	-0.012** (0.031)
Wald Test	201.43*** (0.000)	111.19*** (0.000)	93.13*** (0.000)
AR (2) P-Value	0.931	0.668	0.674
Observations	1,880	1,300	580

Note. The P-statistic based on White (1980) heteroscedasticity adjustment is shown in parentheses, ***, ** and * are statistically significant at 1%, 5%, and 10% significance levels, respectively.

Firstly, the regression model is analyzed. Wald test refused to explain the original hypothesis that the coefficient of variables was zero at the level of 1% significance, moreover, the P-values of AR (2) were all greater than 0.1, so it was impossible to reject the original hypothesis that there was no second-order autocorrelation in the perturbation term. It shows that the selection of tool variables is reasonable and the difference GMM method is reliable.

In particular, in formula (4), the coefficient of $Lev_{i,t-1}$ is $(1 - \gamma_0)$, and the coefficient of $CSR_{i,t} \times Lev_{i,t-1}$ is $(-\gamma_1)$. Because the speed of adjustment is $\delta_{i,t} = \gamma_0 + \gamma_1 CSR_{i,t}$, it is necessary to convert $(1 - \gamma_0)$ to γ_0, and convert $(-\gamma_1)$ to (γ_1), and in this way can we derive the correct speed of capital structure adjustment.

Secondly, from the full sample results of the second column in Table 7, we can see that the coefficient of $Lev_{i,t-1}$ is $(1 - \gamma_0) = 0.906$, and the coefficient of $CSR_t \times Lev_{t-1}$ is $(-\gamma_1) = -0.009$, and is

statistically significant at the significance levels of 1% and 5% respectively. **It proves the hypothesis that the higher the quality of CSR information disclosure, the faster the speed of capital structure adjustment**. From equation (3), we can see that the adjustment speed is $\delta_{i,t} = \gamma_0 + \gamma_1 CSR_{i,t}$, so in the whole sample, the adjustment speed of the capital structure is $\delta_{i,t} = 0.094 + 0.009 \times CSR_{i,t}$. The value of the adjustment speed is between 0 and 1, and the amount is small, which also means that the adjustment of the capital structure needs to pay a high cost.

Considering the ownership, the company is divided into two samples: State-Owned and Non-State-Owned. The speed of capital structure adjustment of State-Owned enterprises is $\delta_{i,t} = 0.135 + 0.010 \times CSR_{i,t}$, while that of Non-State-Owned enterprises is $\delta_{i,t} = 0.192 + 0.012 \times CSR_{i,t}$, which shows that when the quality of CSR information disclosure is the same, the speed of capital structure adjustment of non-state-holding enterprises is faster than that of state-holding enterprises. Zhao and Wang (2011), Sheng et al. (2012) found that the state-owned enterprises have a weak incentive to improve their capital structure because of their apparent soft budget constraints, thus reducing the speed of capital structure adjustment. This is consistent with the conclusion of this paper. Besides, by comparing the adjustment speed between state-owned enterprises and non-state-owned enterprises, it is not difficult to find that the adjustment speed of capital structure of non-state-owned enterprises is more sensitive to the quality of CSR information disclosure. This illustrates a problem: although state-owned enterprises have a natural credit endorsement and can obtain debt financing more quickly, non-state-owned enterprises can make up for their inherent "defects" by improving the quality of CSR information disclosure. This discovery will provide a new idea for non-state-owned enterprises to enhance the speed of capital structure adjustment.

5.4 Robustness Check

In order to prove the robustness of the above empirical results of generalized moment estimation, this paper refers to the practices of Huang (2004), Drobetz and Wanzenried (2006) and Wang (2010), and incorporates the non-debt tax shield (Note 4) into the regression model. Also, we also adjusted the equity structure by using the shareholding ratio of the top five shareholders and the shareholding ratio of the national shares (Note 5), and found that the research conclusions of this paper are still robust.

6. Research Conclusions and Deficiencies

The research of this paper shows that the quality of CSR information disclosure will affect the speed of capital structure adjustment. When the quality of CSR information disclosure is higher, the rate of corporate capital structure adjustment to the target is faster. When the nature of property rights is further considered, the conclusion is still valid. However, compared with state-owned enterprises, the speed of capital structure adjustment of non-state-owned enterprises is more sensitive to the quality of CSR information disclosure. The findings suggest that non-state-owned enterprises can obtain financing convenience by improving the quality of CSR's information disclosure. On the one hand, it would reduce the Information asymmetry between non-state-owned companies and the market, and

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enhance the market's understanding of companies. On the other hand, disclosure of CSR information can help enterprises to establish a positive corporate image, reduce or eliminate investors' worries about non-state-owned enterprises, and make investors more comfortable lending funds to enterprises. The research in this paper will not only help enterprises to improve their awareness of social responsibility, but also provide some references for the government to formulate policies related to enterprises.

Of course, this article also has certain limitations. One is that the difference GMM uses a lot of tool variables, which leads to the problem of weak tool variables. Although Sagan test and Hansen test have been proposed, their reliability is still controversial. Second, because the variables that describe the target capital structure are abstract, and some variables in our country have missing values, the setting of some variables is a little far-fetched, these research limitations will be left for the future to solve further and explore.

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Notes

Note 1.VIF (variance inflation factor) are less than 5, excluding the interference of multicollinearity.

Note 2. Because the null hypothesis was rejected in the Hausman test, the fixed-effect model was used.

Note 3. As China's official CPI system lags behind the reality of the consumer consumption model, the CPI measure of inflation rate may be biased.

Note 4. Non-debt tax shield = (depreciation + amortization)/total assets

Note 5. National stock holdings = national stocks/total number of shares

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