How Corporate Credit Ratings are Affected by Short-Selling Policy

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Abstract: As an important economic reform system in the capital market, does the shorting system have an impact on the adjustment of corporate credit ratings? Based on the data of A-share listed companies in China's Shanghai and Shenzhen markets from 2006 to 2023, this paper evaluates the impact of the short-selling mechanism on corporate credit ratings using a multi-temporal double-difference model, and conducts a series of robustness tests and heterogeneity analysis. The study finds that (1) the short-selling mechanism can have a positive effect on the improvement of corporate credit ratings, which proves that China's asset market is progressing due to the short-selling mechanism. (2) The shorting policy can enhance the disclosure quality of enterprises' information, which can lead to the improvement of corporate credit rating. (3) The greater the intensity of shorting, the greater the effect on the improvement of corporate credit rating. (4) For regions with higher social credit level, the greater the affect of shorting policy on the improvement of corporate credit rating.

Keywords: Short Selling; Credit Rating; Quality of Disclosure; Supervisory Role

1. Introduction

Credit rating is a crucial tool for capital market management that benefits all players and even society at large.

Short selling was first adopted in China's capital markets in 2010 in a pilot financing and bond melting initiated by the CSRC. In order to raise the overall credit rating of businesses, this research aims to explore whether the introduction of a short-selling mechanism in China's capital market can work in concert with the credit rating system.

This paper takes non-financial listed companies with corporate credit subject ratings in 2006-2023 as samples, and empirically investigates the adjusting effect of shorting system on corporate credit ratings after mitigating the endogeneity problem by adopting multi-temporal DID double-difference model, PSM-DID and other methods. The results of the study found that the short-selling mechanism has a remarkable active effect on corporate credit ratings; and the greater the intensity of shorting, the more obvious effect on the enhancement of corporate credit ratings. For regions with a higher level of social credit, the greater the enhancement of corporate credit ratings by the shorting mechanism.

The research contributions of this paper include: firstly, this paper is an early study on the relationship between the shorting system on enterprises and the social masses - the extent to which enterprises can be credited. It also quantifies for the first time the extent of the impact of the shorting system on corporate credit ratings by quantifying the intensity of shorting, and it extends the existing research by studying the impact of the shorting system on corporate credit ratings in different provinces by dividing them by the level of social credit from the geographical perspective. Second, this paper proposes a newer research system, which increases the research dimension from the perspective of adding more different moderating variables.

2. Literature Review

Fu Junhui et al. analyzed the theoretical impact and mechanism of short selling mechanism on credit rating inflation and found that short selling mechanism can significantly inhibit credit rating inflation[1]; Huang Haozheng et al. empirically found that short selling promotes rating agencies to downgrade the rating of bond-issuing firms, and enhances the accuracy of credit ratings and the timeliness of rating adjustments[2]; some scholars also found that short selling mechanism significantly reduces credit risk of listed firms by inhibiting management surplus management and major shareholders' short selling behavior through two channels[3].

Although the economic consequences of short-selling mechanism and its impact on corporate credit ratings have been well studied both at home and abroad, there is little literature that examines corporate credit ratings in terms of market management mechanisms like short selling policy in the capital market.

III.Theoretical mechanisms and formulation of hypotheses

The shorting policy, as a market monitoring policy, can effectively unearth corporate misbehavior. When a company is included in the shorting list, its misbehavior, such as surplus management, can be effectively suppressed due to the regulation of managers, thus improving the quality of its financial information[4]. The studies of Ayers et al. have proved that, when a credit rating agency discovers surplus management behaviors, it will take a lowering of its rating way to penalize[5]. Since surplus management behavior decreases the quality of corporate disclosure, the quality of corporate disclosure will increase when the surplus management behavior of firms in the capital market is restricted[6]. The quality of disclosure is also an important indicator of corporate credit ratings, and rating agency corporate credit ratings will be improved overall. On the other hand, enterprises being exposed to short sellers can stimulate the company's board of directors to rank the company's misbehavior, promote the company's internal governance, improve the level of corporate governance, which will lead to the improvement of corporate credit rating.

To summarize, this paper put forward the hypothesis : short selling policy has an improving impact on corporate credit ratings.

3. Research Design

3.1 Data Sources and Sample Processing

This paper selects listed companies that issued credit bonds in Shanghai and Shenzhen from 2006 to 2023 and have been subject to long-term credit ratings by third-party rating agencies as the initial research sample, and the data on corporate credit ratings needed in the study mainly come from the RESSET database. The data related to whether they are included in the shorting list and the intensity of shorting are mainly obtained from the CSMAR database and the RESSET database.

The samples were processed as follows: firstly, samples of listed companies with multiple long-term credit ratings of the main body in the same year were excluded; samples of listed companies in the financial industry were excluded; samples of companies delisted in ST, PT delisted companies; excluded the sample in the year of IPO; excluded the sample of listed companies before IPO; excluded the sample of listed companies with missing main variables; finally, this paper performs the shrinking of the tail at the level of 1% for all the continuous variables (Winsor2) treatment[7].

3.2 Model Construction

Formula (1) is the formula for building the model

$$Rate/Ln(rate)=\alpha+\beta_1 Short+\beta_2 Size+\beta_3 Lev+\beta_4 Growth+\beta_5 Roa+\beta_6 Civerage+\beta_7 Current+\beta_8 MB+\beta_9 SOE+\beta_{10} Top1+\sum Year+\sum Firm+\varepsilon \quad (1)$$

3.3 Variable Interpretation

Dependent variables: corporate credit rating (Rate); natural logarithm of corporate credit rating (Ln(Rate))

The credit rating data used for corporate credit rating scores are the long-term credit ratings of subjects published by credit rating agencies. The assignment method of Becker and Milbourn is used to convert the results rated by the rating agencies into numerical form[8].

Independent variable: Whether or not the company is included in the list of shorts (Short)

Define the dummy variable Treat, which is equal to 1 if the company has been included in the short selling list, and 0 if the firm is not short sold.

Control variables: Firm Size (Size), which is the logarithm of the company's total assets at the end of each year; Gearing Ratio (Lev), which is the ratio of the company's total assets at the end of each year to the company's total liabilities at the end of each year; and (Growth), which is the ratio of the company's operating revenue growth rate at the end of each year to its total liabilities at the end of each year., which is the growth rate of the company's year-end operating income; return on total assets (Roa), which is the ratio of the company's year-end net profit to its year-end total assets; interest coverage multiple (Coverage), which is the ratio of the company's pre-tax profit to its interest expense; current ratio (Current), which is the ratio of the company's current assets to its current liabilities; and market-to-book (MB), which is the ratio of the market value to the book value; Nature of the

company (SOE), which is taken as 1 if it is a state-owned enterprise and 0 otherwise; and the percentage of shares held by the largest shareholder of companies(Top1). Year and firm-level dummy variables are included in the model in order to control for the year and individual effects.

4. Empirical Results

4.1 Summary Statistics

The following table 1 shows descriptive statistics about each of the variables selected for this paper. 60.6% of the listed companies experienced short selling during the sample period. The mean value of corporate credit ratings is 17.602 (score range 0-20), which generally shows a relatively good credit level.

Table 1. Summary Statistics

VarName	Obs	Mean	Median	SD	Min	Max
Stkcd	6266	3.59e+05	6.00e+05	2.93e+05	2.000	6.89e+05
Year	6266	2016.014	2016.000	4.191	2006.000	2023.000
Current	6266	1.343	1.168	1.004	0.028	28.098
Lev	6266	0.576	0.583	0.161	0.060	1.484
Roa	6266	0.034	0.034	0.008	0.014	0.053
Growth	6266	1.896	1.921	1.179	0.271	5.940
Top1	6266	21.193	15.240	6.767	14.540	29.380
Size	6266	27.361	27.446	0.834	24.605	28.293
MBA	6266	5.187	4.966	1.055	3.173	7.437
ListingYear	6266	1999.775	1999.000	4.698	1990.000	2009.000
SOE	6266	0.240	0.000	0.427	0.000	1.000
Short	6266	0.606	1.000	0.489	0.000	1.000
Rate	6266	17.602	17.000	1.700	1.000	20.000
Ln_Rate	6266	2.862	2.833	0.122	0.000	2.996

4.2 Benchmark Regression

Table 2. Benchmark Regression

VARIABLES	(1) Ln_Rate	(2) Rate
Short	0.019***	0.270***
	(4.02)	(3.98)
Current	0.002	0.036
	(1.12)	(1.46)
Lev	-0.055**	-0.698**
	(-2.12)	(-2.19)
Roa	0.743*	15.116***
	(1.76)	(3.59)
Growth	0.028**	0.347***
	(2.53)	(3.86)
Top1	-0.018*	-0.180*
	(-1.68)	(-1.95)
Size	0.129***	1.653***
	(3.43)	(5.25)
MBA	-0.008	-0.210***
	(-1.11)	(-3.78)
Constant	-0.232	-22.927***
	(-0.29)	(-3.49)
Observations	6,266	6,266
R-squared	0.092	0.222
Number of Stkcd	755	755
Company FE	YES	YES
Year FE	YES	YES

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Columns (1) and (2) of Table 2 report the effect of the shorting regime on the quantitative logarithmic and non-logarithmic forms of firms' credit ratings, respectively, both of which are significant at the 1% level, fixing for firm-individual versus year effects. Therefore, the hypothesis can be preliminarily tested: the shorting mechanism has an improving effect on corporate credit ratings.

4.3 Parallel Trend Test

In order to further examine the dynamic effects of the shorting regime and conduct parallel trend tests, this paper constructs the following dynamic double-difference model with reference to Hu, Jie et al.[9] :

$$Rate/Ln(rate)=\alpha+\beta_s^{precut}[D_i\times I(t-T_D<-3)]+\sum_{s=-3}^{-2}\beta_s^{pre}[D_i\times I(t-T_D=s)]+\sum_{s=0}^{3}\beta_s^{post}[D_i\times I(t-T_D=s)]+\beta_s^{postcut}[D_i\times I(t-T_D>2)]+\sum Yeat+\sum Firm+\varepsilon \quad (2)$$

where $D_i=1$ denotes that firm i is the treatment group and $D_i=0$ denotes that firm i is the control group; (1) is the indicative function, T_D is the period when firms are included in the short-selling list, s is the time difference between the sample year and T_D, and s= -1 denotes the base period, and coefficient βs reflects the dynamics

of the shorting regime on firms' credit ratings. When the regression coefficients β_s^{precut} and β_s^{pre} are not significantly different from 0, while $\beta_s^{postcut}$ and β_s^{post} are significantly different from 0 indicate that this double difference model passes the parallel trend test. Due to the long sample period, this paper chooses to show only partial period results.

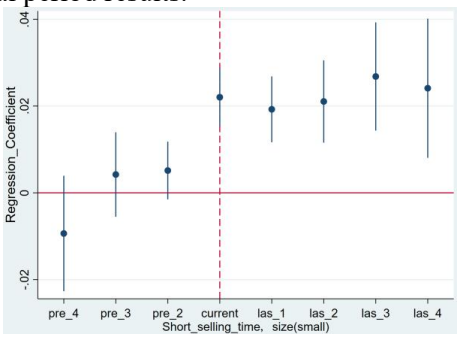

Figure 1. Parallel Trend Test - Ln(Rate)

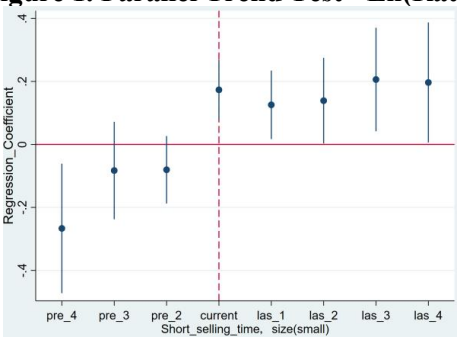

Figure 2. Parallel Trend Test-Rate

The results of the parallel trend test shown in Figure 1 and Figure 2 indicate that none of the coefficient estimates for the periods prior to the implementation of the shorting regime are significant. This indicates that there is no significant difference between firms included in the shorting list and firms not included in the shorting list before the implementation of the shorting regime, and the study sample passes the parallel trend test.

4.4 Robustness Testing

4.4.1 Placebo testing:

a) Placebo test based on spurious year: In order to exclude the interference of other factors, this paper draws on Bai, Junhong et al's research. For all the samples of firms that are included in the short list[10]. A random distribution is constructed by randomly generating 500 different "false short years". The results of the distribution are shown in Figure 3. The policy effect is not significant after the randomized advance, which successfully demonstrates that the multi-temporal DID model constructed in this paper is relatively robust.

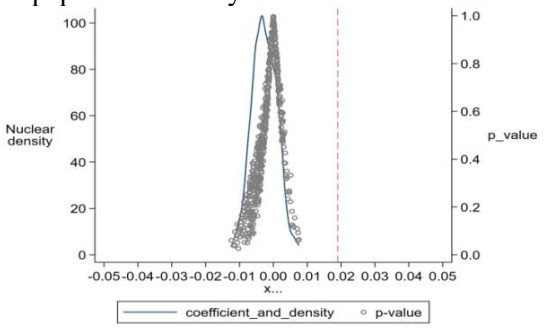

Figure 3. Placebo Test based on Spurious Year

b) Placebo test based on individuals: In this paper, we randomly construct the year in which the shorting policy affects firms through a placebo test to ensure that the benchmark regressions results will not be affected by unobservable missing variables. Repeating the sampling 500 times, 500 regression coefficients and their corresponding p-values are obtained. Plotting the kernel density distributions and P-values of these 500 coefficient estimates in Figure 4 shows that the regression coefficients fall around the value of 0 and follow a normal distribution, and most of the regression results are not significant. The coefficient estimates in the benchmark regression are located in the high tail of the distribution of spurious regression coefficients, which is a small probability event in the placebo test. Therefore, it can be ruled out that the baseline estimates in this paper are due to non-observables.

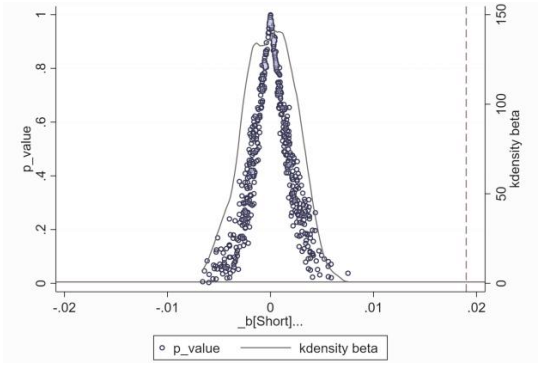

Figure 3. Placebo Test based on Individuals

4.4.2 PSM-DID propensity score matching method:

This paper attempts to further mitigate the potential endogeneity problem by using the PSM-DID propensity matching score method. Drawing on previous studies, this paper employs 1:1 proximity matching and 0.01 caliper matching methods for the experiments, respectively. The matching results are shown in Tables 3 and 4, which show that the standard

deviations of the covariates are all less than 10%, and all the t-tests are insignificant, with a good matching effect; Figure 4 shows the standardized deviation plots to meet the assumptions.

Table 3. 1:1 Proximity Matching Method Matching Results

Unmatched Variable	Mean Matched	%reduct Treated	t-test Control	V(T)/%bias	bias	t	p>|t|
Current	U	1.309	1.508	-18.60	-5.910	0	0.69*
M	1.298	1.373	-7	62.40	-4.460	0	0.81*
Lev	U	0.578	0.568	6.200	1.910	0.0560	0.78*
M	0.578	0.582	-2.400	61.50	-1.250	0.212	0.87*
Roa	U	0.0334	0.0357	-29.40	-8.270	0	1.43*
M	0.0334	0.0334	0.300	98.90	0.160	0.876	1.08*
Growth	U	1.845	2.145	-26	-7.590	0	1.11*
M	1.846	1.840	0.600	97.80	0.290	0.772	1.17*
Top1	U	21.50	19.70	27	7.960	0	1.06*
M	21.49	21.77	-4.200	84.50	-2.100	0.0360	0.980
Size	U	27.39	27.20	23.90	6.990	0	1.12*
M	27.39	27.41	-2.100	91.20	-1.070	0.284	1.13*
MBA	U	5.180	5.223	-4.100	-1.200	0.230	1.18*
M	5.182	5.234	-5.100	-22.30	-2.460	0.0140	0.950
SOE	U	0.227	0.300	-16.70	-5.110	0	.
M	0.228	0.206	5	69.70	2.740	0.0060	.
*	if	B>25%,	R	outside	0.5;	2	

Table 4. 0.01 Caliper Matching Method Matching Results

Unmatched Variable	Mean Matched	%reduct Treated	t-test Control	V(T)/% bias	bias	t	p>|t|
Current	U	1.309	1.508	-18.60	-5.910	0	0.69*
M	1.290	1.365	-7.100	62.10	-4.680	0	0.78*
Lev	U	0.578	0.568	6.200	1.910	0.0560	0.78*
M	0.579	0.582	-1.700	72.60	-0.880	0.381	0.83*
Roa	U	0.0334	0.0357	-29.40	-8.270	0	1.43*
M	0.0334	0.0334	-0.100	99.80	-0.0300	0.972	1.09*
Growth	U	1.845	2.145	-26	-7.590	0	1.11*
M	1.845	1.838	0.600	97.70	0.300	0.763	1.12*
Top1	U	21.50	19.70	27	7.960	0	1.06*
M	21.50	21.68	-2.700	89.90	-1.370	0.171	0.980
Size	U	27.39	27.20	23.90	6.990	0	1.12*
M	27.39	27.40	-1.200	95	-0.610	0.542	1.11*
MBA	U	5.180	5.223	-4.100	-1.200	0.230	1.18*
M	5.181	5.218	-3.600	12.40	-1.770	0.0780	0.960
SOE	U	0.227	0.300	-16.70	-5.110	0	.
M	0.228	0.206	4.900	70.60	2.660	0.00800	.
*	if	B>25%,	R	outside	0.5;	2	

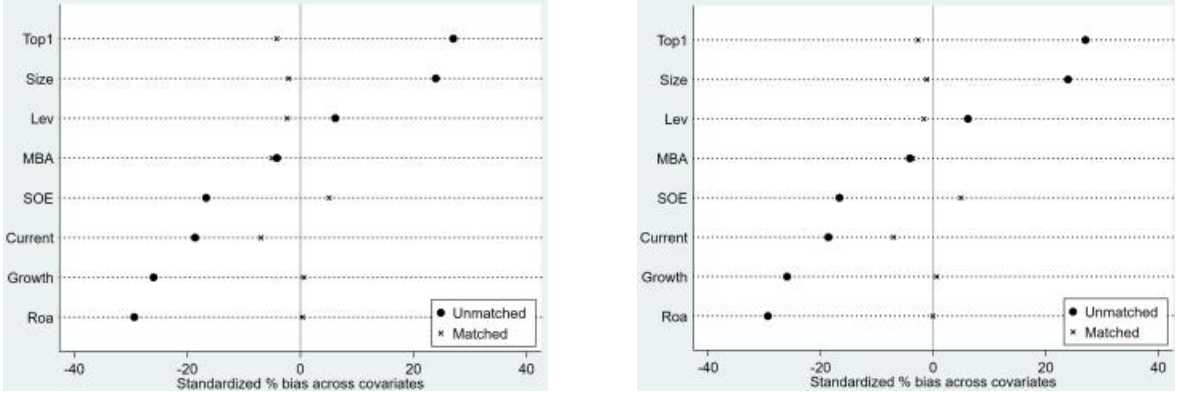

Figure 4. Placebo Test based on Individuals

The test results after matching can be seen in Table 5 and Table 6, and the regressions before and after matching are significant, which further verifies the robustness of the conclusions of this paper.

Table 5. 1:1 Proximity Matching Method Test Results

	(1)	(2)
variables	origin	psm
Short	0.0187***	0.0425***
	(4.0177)	(4.0450)
Current	0.0024	0.0042
	(1.1223)	(0.5456)
Lev	-0.0552**	-0.1291
	(-2.1211)	(-1.6202)
Roa	0.7425*	-1.9071
	(1.7583)	(-0.9808)
Growth	0.0279**	0.1294
	(2.5252)	(1.5502)
Top1	-0.0177*	-0.0273
	(-1.6837)	(-0.6781)
Size	0.1287***	0.2462*
	(3.4274)	(1.7063)
MBA	-0.0081	0.0243
	(-1.1139)	(0.7720)

Table 6. 0.01 Caliper Matching Method Test Results

variables	(1)origin	(2)psm
Short	0.0187***	0.0187***
	(4.0177)	(4.0374)
Current	0.0024	0.0035
	(1.1223)	(0.8814)
Lev	-0.0552**	-0.0552**
	(-2.1211)	(-2.0146)
Roa	0.7425*	0.7405*
	(1.7583)	(1.7503)
Growth	0.0279**	0.0279**
	(2.5252)	(2.5216)
Top1	-0.0177*	-0.0177*
	(-1.6837)	(-1.6636)
Size	0.1287***	0.1287***
	(3.4274)	(3.3926)
MBA	-0.0081	-0.0080
	(-1.1139)	(-1.0993)

Table 7. 1:1 Proximity Matching Method Test Results

variables	(1) Ln_Rate (lagged one year)	(2)Ln_Rate (lagged two years)
L.Short	0.012**	0.009*
	(2.51)	(1.85)
Current	0.002	0.002
	(0.76)	(0.69)
Lev	-0.032	-0.032
	(-1.11)	(-1.03)
Roa	0.901***	1.083***
	(2.64)	(2.72)
Growth	0.021***	0.018***
	(3.77)	(3.61)
Top1	-0.015**	-0.020**
	(-1.97)	(-2.14)
Size	0.147***	0.154***
	(3.66)	(3.57)
MBA	-0.011*	-0.011
	(-1.82)	(-1.46)
Constant	-0.804	-0.862
	(-0.85)	(-0.89)
Observations	5,260	4,510
R-squared	0.088	695
Number of Stkcd	748	0.064
Company FE	YES	YES
Year EF	YES	YES

3) Explanatory variables lagged one year:

This paper adopts the approach of lagging the explanatory variables by one year and two years respectively, which can explain to some extent the causal relationship between the short-selling mechanism and the improvement of corporate credit rating. The regression results can be seen in Table 7, and the coefficients are all positive and all show some significance to different degrees. In turn, the robustness of the model is verified.

4.5 Impact Mechanism Testing

In order to test the preliminary hypothesis of this paper that the shorting mechanism can improve the mediation effect of corporate credit rating by improving the quality of corporate disclosure, this paper draws on the classic mediation effect model of Barron and Kenny and constructs the model (3) to test it. The disclosure quality data comes from the ratings of SSE and SZSE in the Cathay Pacific database, and the assignment method of QualityRate is that if the rating is 1, then the value is 4, and so on in decreasing order. The regression results are shown in Table 8. Column (2) shows that the short-selling mechanism has a positive effect on corporate disclosure quality. The coefficient in column (3) is positively significant and smaller than the coefficient in column (1), suggesting that the upgrading effect of the shorting mechanism on corporate credit ratings is partially transmitted

through the mediating variable disclosure quality.

$$InfoQuality = \alpha + \gamma Short + \beta_2 Size + \beta_3 Lev + \beta_4 Growth + \beta_5 Roa + \beta_6 Coverage + \beta_7 Current + \beta_8 MB + \beta_9 SOE + \beta_{10} Top1 + \sum Year + \sum Firm + \varepsilon \quad (3)$$

Table 8. Intermediation Effect Regression Results

	(1)	(2)	(3)
VARIABLES	Ln_Rate	Short	γ
QualityRate			0.0074**
			(2.0065)
Short	0.0187***	0.0520*	0.0183***
	(4.0177)	(1.7293)	(4.0090)
Current	0.0024	-0.0206	0.0026
	(1.1223)	(-0.9711)	(1.1855)
Lev	-0.0552**	-0.4825***	-0.0516**
	(-2.1211)	(-3.5023)	(-2.0649)
Roa	0.7425*	0.0455	0.7422*
	(1.7583)	(0.0138)	(1.7504)
Growth	0.0279**	-0.0434	0.0283**
	(2.5252)	(-0.7903)	(2.5480)
Top1	-0.0177*	-0.0284	-0.0174*
	(-1.6837)	(-0.5663)	(-1.6600)
Size	0.1287***	0.2068	0.1271***
	(3.4274)	(1.3844)	(3.3963)
MBA	-0.0081	0.0060	-0.0081
	(-1.1139)	(0.2011)	(-1.1205)
Sobel			0.00038615*
Goodman-1			0.00038615*
Goodman-2			0.00038615*
Proportion of total effect that is mediated			0.2068105

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5. Heterogeneity Analysis

5.1 The Extent to which the Magnitude of Shorting Strength (SSP) Affects a Firm's Credit Rating

In addition to the qualitative analysis of whether a firm is included in the shorting list, the shorting intensity indicator can also be used quantitatively to reflect the degree of shorting activity during the shorting period of a firm. This paper also draws on the methodology of Li, Zhisheng et al. to use the ratio of the securities financing balance (securities lending - securities repayment) to the market capitalization of outstanding shares (SSP) as a measure of short-selling intensity[11].

The results are shown in columns (1) and (2) of Table 9. The regression coefficients are all positive and all show a significance at the level of 10%, so it can be preliminarily concluded that the greater the shorting intensity, the greater the impact on corporate credit rating improvement.

Table 9. Heterogeneity Analysis Regression Results

	(1)	(2)	(3)	(4)
VARIABLES	Ln_Rate	Rate	High level	Low level
SSP	0.244*	0.273*	0.018***	0.020**
	(1.68)	(1.80)	(3.59)	(2.24)
Current	0.002	-0.001	0.004*	-0.000
	(1.11)	(-0.63)	(1.66)	(-0.09)
Lev	-0.056**	-0.047***	-0.069*	-0.035
	(-2.13)	(-3.52)	(-1.82)	(-1.20)
Roa	0.846**	1.120***	0.608	0.949
	(2.02)	(2.67)	(1.07)	(1.51)
Growth	0.029***	0.006***	0.016***	0.048*
	(2.60)	(2.81)	(2.99)	(1.72)
Top1	-0.015	0.001**	-0.033**	0.007
	(-1.42)	(2.57)	(-2.02)	(0.96)
Size	0.124***	0.045***	0.171***	0.063**
	(3.33)	(11.90)	(2.91)	(2.52)
MBA	-0.010	-0.012***	-0.003	-0.017***
	(-1.36)	(-4.91)	(-0.26)	(-3.63)
Constant	-0.173	1.635***	-0.985	0.940
	(-0.22)	(15.09)	(-0.80)	(1.50)
Observations	6,266	6,266	3,838	2,428
R-squared	0.089		0.073	0.153
Number of Stkcd	755	755	446	309

Company FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5.2 The Extent to which the Short-Selling Mechanism Affects Corporate Credit Ratings in Regions with Different Levels of Social Creditworthiness

For enterprises in different regions, due to cultural differences, differences in the level of economic development, credit system construction and other factors, there are also large differences in the level of social credit. When regions have high social credit level are included in short-selling lists, management and directors may take measures to improve internal corporate governance and limit corporate misbehavior, thus having a greater impact on upward credit rating adjustments. However, in regions where the overall social credit level is low, firms as well as the people tend to focus less attention on whether a firm is included in the short-selling list, and thus the short selling policy act a smaller influence on the upward adjustment of credit ratings.

In this paper, according to the evaluation results of social credit level of different provinces in Zhang Weiying and Ke Rongzhu[12] the samples of enterprises are divided into groups of low social credit level and high social credit level according to the location of their listing (Based on the weighted scores for each province in the table that does not exclude regions of the province that are creditworthy, a listed city is classified as having a high social credit level when the score for the province in which it is located is greater than 30, those below 30 are categorized as low social credit levels, such as Shanghai, which ranks first with a weighted score of 218.9, Beijing, which ranks second with a score of 169.) And the regression results of the grouping in columns (3) and (4) of Table 9 shows that the short selling policy enhances the credit ratings of the enterprises with high social credit level more, tentatively support the above assumptions.

6. Conclusion and Policy Implications

The shorting policy has helped the Securities and Exchange Commission (SEC) and other governmental agencies to a certain extent as a powerful regulatory tool by allowing third parties other than firms and the public to participate in market trading. In this paper, we regard the implementation of the shorting policy as a "quasi-natural experiment", and based on the data of A-share listed companies in China's Shanghai and Shenzhen stock markets from 2006 to 2023, we evaluate the impact of the short-selling mechanism on the credit ratings of corporations by using a multi-temporal double-difference model, and conduct a series of robustness tests and heterogeneity analyses.

This paper finds that (1) The shorting policy can enhance the disclosure quality of enterprises information, which proves that China's asset market is progressing due to the short-selling mechanism. (2) The shorting policy can enhance the disclosure quality of enterprises information, which leads to the improvement of corporate credit rating. (3) The greater the intensity of shorting, the greater the effect on the improvement of corporate credit rating. (4) For regions with higher social credit level, the greater the impact of short-selling mechanism on the improvement of corporate credit rating.

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