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Research on the Impact of New Asset Management Regulations on Trade Credit Financing

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Abstract. Financing has always been a difficulty for small and medium-sized enterprises (SMEs) and private enterprises in our country. After new asset management regulations were introduced, shadow banking has been inhibited and enterprises turned to trade credit financing. This paper uses the panel data of China's A-share listed companies from 2013 to 2022 as a sample to explore the impact of new asset management regulations on trade credit financing of enterprises by DID model. The results show that the new regulation promotes the trade credit financing. Improving financing constraints is the way for the policy to influence trade credit financing. In areas where shadow banking is developed or companies with less collateral, the policy promote trade credit financing more vigorously. It is suggested that enterprises should strengthen communication with each other, and the government should guide commercial banks to establish a new loan evaluation system and correctly guide the healthy development of shadow banking.

Keywords: New Asset Management Regulations; Trade Credit Financing; Financial Constraints.

1. Introduction

Since the 2008 global financial crisis, shadow banking has grown rapidly under the stimulus of the 4 four trillion package. In order to reduce capital occupation, commercial banks vigorously developed intermediate business and transfer funds to off-balance sheet through entrusted loans, trust plans and other ways. The period from 2012 to 2016 was the stage of rapid development of shadow banking, and the annual growth rate of off-balance sheet business represented by shadow banking exceeded 50%, much higher than the growth rate of on-balance sheet business. By the end of 2016, the scale of China's broad shadow banking reached a historical peak of 100.4 trillion yuan [1]. However, at that time, the magnitude of shadow banking business had far exceeded the internal control capacity of commercial banks, and the capital pool business, the chain nesting, and rigid payment had left huge hidden dangers for the entire financial system, and the real economy could not get enough support of funds due to the "from real to virtual", which means that the shadow banking industry needs supervision and rectification. As a result, the "Guiding Opinions on Regulating the Asset Management Business of Financial Institutions", referred to as the "New asset management regulations", was issued and implemented, which dealt a heavy blow to the financial chaos, aimed at reducing systemic financial risks, stopping them being distracted from their intended purpose, and achieved great results.

However, the shadow banking industry has been regulated at the same time as its scale is shrinking, which has narrowed the financing channels for SMEs and private enterprises that rely on shadow banking financing. This is because SMEs and private enterprises are discriminated by formal credit due to lack of collateral and no guarantee, so they can only borrow from informal credit channels represented by shadow banking [2]. After the implementation of the new asset management regulations, enterprises need to find new financing methods to alleviate the financing difficulties, so they turn to trade credit financing, which is a trade credit between suppliers and customers, through deferred payment and deferred supply to achieve, accounting for accounts payable, notes payable and unearned revenue. Trade credit financing is a kind of alternative financing, which can significantly help SMEs and private enterprises to alleviate financing constraints, especially in the period of monetary policy tightening [3], substitute effect of trade credit financing is more obvious. Therefore,

after the implementation of the new asset management regulations, enterprises faced the similar external environment of reduced credit funds. Can trade credit financing also play a role of alternative financing? In response to this question, this paper conducts a study to explore whether the asset management will significantly increase the trade credit financing of enterprises.

2. Literature Review

2.1. Research on New Asset Management Regulations

The existing research on the economic effects of new asset management regulations can be divided into two parts according to the object of action: the effect on the financial system and the effect on the entity enterprises.

For the financial system, the new asset management regulations have strengthened the supervision of the asset management industry and greatly reduced systemic financial risks. By breaking the rigid payment and prohibiting the operation of capital pools, the new asset management regulations inhibit the regulatory arbitrage behavior of banks issuing financial products to evade capital supervision and deposit interest rate constraints [4]. Secondly, banks with a high degree of shadow banking have a higher non-performing loan ratio, while the new asset management regulations strictly regulate the shadow banking business, prompting banks to make more prudent investment, improve loan quality and capital adequacy ratio, and thus reduce the risk of the banking system [5-6].

For the entity enterprises, the role of the new asset management regulations is mostly reflected in the allocation of resources, "from virtual to real" and financing issues. The policy regulates the asset management industry and the financial product market, inhibits the financialization behavior of non-financial enterprises in pursuit of high returns, enables enterprises to invest funds in entities, and improves the investment level of enterprises [7]. In addition to the internal resource allocation "from virtual to real", in the economic system, resource allocation also tends to be reasonable. Since inefficient enterprises need to use productive capital as collateral when they participate in shadow banking financing, the policy will reduce the productive capital holding rate of inefficient enterprises, and then more funds will flow to efficient enterprises [8]. For SMEs and private enterprises, their own financing constraints are high, so commercial banks are not willing to grant loans to them. In order to meet the demand for funds, SMEs and private enterprises resort to informal financial channels represented by shadow banking, thereby reducing financing constraints [9-11]. The policy has increased the financing constraints of SMEs and private enterprises that were originally relieved by shadow banking. However, the nature of shadow banking alleviating the difficulty for SMEs and private enterprises is replacing the problem of "difficult financing" with "expensive financing", which means that the financing cost of enterprises is still high [12].

2.2. Research on Trade Credit Financing

The existing research on trade credit financing mainly focuses on the role and influencing factors of trade credit financing. First of all, the role of trade credit financing is to alleviate financing constraints, provide low-cost financing, and effectively alleviate information asymmetry [13]. Secondly, trade credit financing can promote enterprise innovation, but there is an optimal critical value [14]. Moreover, trade credit financing can improve enterprise efficiency and total factor productivity by easing financing constraints, and there is also an inverted U-shaped relationship [15-16]. Finally, for regions with weak financial institutions, trade credit financing can better promote the sustainable development of enterprises [17].

The factors that affect trade credit financing are mainly divided into external factors and internal factors. External factors are mainly domestic policy factors and international trade factors, such as tight monetary policy reducing trade credit financing [18], non-traditional monetary policies such as MLF increasing it [19], economic policy uncertainty reducing trade credit financing [20], trade friction and foreign investment reducing trade credit financing [21-22]. Internal factors include

information asymmetry, internal control, social trust, and corporate strategy. High comparability of accounting information, information tracking and disclosure, high quality of internal control and high degree of social trust will increase trade credit financing [23-26], while differences in corporate strategies and heterogeneous financial strategies deviating from the industry average will reduce trade credit financing [27-28].

2.3. Conclusion on Literature

Most of the existing literature started from the policy purpose of the new asset management regulations, studied the role of the policy in promoting the economy "from virtual to real" and regulating financial risks. There are also studies involving the role of the policy in changing corporate financing constraints, but there are few studies on another solution to the financing problem of enterprises after policy--trade credit financing. The marginal contributions of this paper are as follows: (1) There are few literature on the impact of new asset management regulations on trade credit financing, and this paper fills a certain gap; (2) The mechanism between the policy and trade credit financing is studied; (3) Put forward innovative policies, and proposed to establish a new loan evaluation system for SMEs and private enterprises, not mainly based on whether the collateral is sufficient, but through the analysis of financial indicators and field visits to evaluate whether an enterprise has the ability to repay the debt.

3. Theoretical Background and Hypothesis Development

The main financing channel of SMEs and private enterprises in China is not commercial banks, but non-bank financial institutions represented by shadow banks [29]. The strong regulatory role of the new asset management regulations has narrowed the financing channels of enterprises from shadow banking, which means that enterprises need to obtain funds needed for production and operation development from other channels. In fact, shadow banking financing is not the best solution to financing, because the long business chain of shadow banking has pushed up the rate of return, and the price of funds has also risen when they enter the real economy [30]. According to the pecking order theory, the company should preferentially choose the financing with low financing cost. Because of its easy access and low cost, trade credit financing is likely to become the second choice of enterprises. According to the above analysis, the new asset management regulations will promote trade credit financing. Therefore, hypothesis 1 is proposed in this paper.

Hypothesis 1: New asset management relations promote trade credit financing.

Based on the above analysis, the new asset management regulations have greatly narrowed the channels for enterprises to obtain financing from shadow banks, so the financing constraints of enterprises have increased. In order to alleviate the problem, enterprises turn to trade credit financing. According to the above analysis, financing constraints become the bridge that new asset management regulations affect the trade credit financing. Therefore, hypothesis 2 is proposed in this paper.

Hypothesis 2: New asset management regulations promote trade credit financing through increasing financial constraints of enterprises.

SMEs and private enterprises rely on shadow banking financing, and the development level of shadow banking is not the same in different regions. Therefore, different regions have different responses to the new asset management regulations. For regions with high levels of shadow banking development, the financing channels of enterprises will be more affected, and the increase in trade credit financing will be more significant. Based on the above analysis, hypothesis 3 is proposed in this paper.

Hypothesis 3: In areas with a high level of shadow banking development, the new asset management regulations play a greater role in promoting trade credit financing.

The demander of funds has an information advantage over the supplier of funds. Banks and other financial institutions are reluctant to lend money due to information asymmetry, so information asymmetry will increase the financing constraints of enterprises [31]. Collateral can compensate for

the potential losses of banks through auction or other means to reduce the financing costs and financing constraints caused by information asymmetry [32]. Therefore, enterprises with more collateral are more likely to obtain loans and have relatively small demand for trade credit financing. Based on the above analysis, this paper proposes hypothesis 4.

Hypothesis 4: The new asset management regulations have a greater promoting effect on trade credit financing for enterprises with less collateral.

4. Sample and Data

4.1. Sample

This paper selects the annual financial data of China's A-share listed companies from 2013 to 2022 as samples, and the data source is CSMAR database. Data on the scale of social financing comes from the People's Bank of China. Since the new asset management regulations were introduced on April 27, 2018, the five years before the policy and four years after the policy were selected as the pre-policy period and the post-policy period. In this paper, the following processing methods are adopted for the original data: (1) Eliminate the samples of companies whose data belong to the financial industry, ST and ST*, and the data of major variables; (2) Eliminate the samples of companies whose data are only before or after the implementation of the policy; (3) Conduct winsorization at 1% and 99% percentile. A sample of 12,741 companies was obtained.

4.2. Model

This paper studies the influence of new asset management regulations on trade credit financing by using difference-in-differences model (DID). Heckman et al. [33] first applied DID model to the evaluation of public policy effects. Since then, DID model has been widely used to evaluate the influence of various policies. This method can effectively avoid endogeneity problem by dividing experimental group and control group to test the influence of policy on experimental group. However, there is no obvious experimental group and control group for the new asset management regulations. Considering that state-owned enterprises and non-state-owned enterprises have different financing constraints and different ability to obtain bank credit, and the introduction of new asset management regulations is a strong supervision and rectification of shadow banking industry, non-state-owned enterprises with high financing constraints and relying on shadow banking financing will be more affected. This paper follows the practices of Du [10], Wang and Yi [30]. Non-state-owned enterprises are classified as the experimental group and state-owned enterprises as the control group. Dummy variables of the experimental group and the control group were set: Treat=1 for the experimental group and Treat=0 for the control group. According to the policy implementation time, the dummy variable Post=1 is set for 2018 and subsequent years, and Post=0 is set for the remaining years. The difference-in-differences term Did=Treat*Post is set to represent the policy effect of the new asset management regulations on the trade credit financing. With reference to the practice of Zou et al. [34], a DID model is established.

$$Y_{i,t} = \beta_0 + \beta_1 Did_{i,t} + \beta_2 Post + \beta_3 Treat + \beta_{i,t} X_{i,t} + \mu_i + \eta_t + Ind + \varepsilon_{i,t} \quad (1)$$

This paper sets i as a This paper set enterprise, t as time, Y as trade credit financing, Did as difference-in-differences term, X as control variable, μ_i as individual fixed effect, η_t as time fixed effect, Ind as industry fixed effect, and $\varepsilon_{i,t}$ as random error.

4.3. Variable Defining

4.3.1. Dependent Variable

With reference to the practice of Lu and Yang [3] and Zhu [28], this paper uses the sum of accounts payable, notes payable and unearned revenue in the annual consolidated financial statements of

enterprises divided by the total assets to represent trade credit financing, reflecting the ability of enterprises to obtain trade credit financing from upstream and downstream enterprises.

4.3.2. Independent Variable

Construct the cross-multiplication term with Treat*Post as the difference-in-differences term.

4.3.3. Mechanism Variable

This paper uses the SA index as financial constraints, constructed by Hadlock and Pierce [35], whose calculation formula is: SA=-0.737×size+0.043×size2-0.04×age. The index is constructed only from the total assets of the firm and the age of the firm, unlike the KZ index and WW index, which have multiple endogenous variables. The larger the index, the smaller the financing constraints.

4.3.4. Control Variable

Table 1. Definition of variable

Variable	Definition	Name	Measurement
Dependent variable	Trade credit financing	Credit	(accounts payable + notes payable + unearned revenue)/total assets
Independent variable	DID term	Did	Post×Treat
Mechanism variable	Financial constraints	SA	The larger the index, the smaller the financing constraints.
Control variable	Staging dummy variable	Post	Post=1 In and after 2018, post=0 before 2018

Table 1. Definition of variable (continued)

Variable	Definition	Name	Measurement
Control variable	Grouping dummy variable	Treat	Treat=1 if the enterprise is non-state-owned, Treat=0 if the enterprise is state-owned
	company size	Size	The natural logarithm of a company's total assets
	Collateral	Collateral	(stock + fixed assets)/total assets
	Cash holding	Cash	Cash/total assets
	Profitability	ROA	Net profit/total assets
	Growth	Growth	(Operating income amount for the current period - Operating income amount for the same period last year)/(Operating income amount for the same period last year)
	Bank loans	Bank	(short-term loans + long-term loans)/Total assets
	Board size	Board	Number of directors
	board Independence	Indepen	Number of independent boards/ Number of directors
	Dual	Dual	If the president and the general manager are the same person, the value is 1; otherwise, the value is 0
	Management shareholding	Msh	If the chairman and the general manager are the same person, the value is 1; otherwise, the value is 0
	Share concentration	Shr1	The proportion of the largest shareholder
	Industry competition	HHI	The Herfindahl-Hirschman Index, which calculates operating income by industry, the smaller the index, the greater the degree of competition in the industry
	Enterprise competitive position	Market	Lerner index = (operating income - operating cost - selling expense - administrative expense)/operating income; the higher the value, the higher the market monopoly position of the company

Based on existing studies, this paper selects the following control variables: company size (Size), Collateral (Collateral), cash holding (Cash), profitability (ROA), growth (Growth), bank loans (Bank), board size (Board), board independence (Indepen), Dual (Dual), management shareholding (Msh), share concentration (Shr1), industry competition (HHI), and enterprise competitive position (Market). Table 1 shows how the main variables are measured.

4.3.5. Descriptive Statistics

It can be seen from Table 2 that there is a large gap between the minimum and maximum values of trade credit financing (Credit) and bank loans (Bank), indicating that there are big differences in the proportion of trade credit financing and bank borrowing capacity of different enterprises. The mean and median values of trade credit financing are 0.18 and 0.154 respectively, indicating that trade credit financing has become an important financing means for enterprises. The mean value of the dummy variable Post is 0.458, indicating that the distribution of samples before and after the implementation of the new asset management regulations is relatively balanced. The mean value of the dummy variable Treat is 0.645, indicating that there are more non-state-owned enterprises than state-owned enterprises in the sample.

Table 2. Descriptive statistics

Variable	Mean	Std.Dev.	Min	P25	P50	P75	Max
Credit	0.180	0.113	0.0004	0.0957	0.154	0.241	0.728
Did	0.302	0.459	0.000	0.000	0.000	1.000	1.000

Table 2. Descriptive statistics (continued)

Variable	Mean	Std.Dev.	Min	P25	P50	P75	Max
SA	-3.827	0.257	-4.890	-3.990	-3.829	-3.672	-2.094
Post	0.458	0.498	0.000	0.000	0.000	1.000	1.000
Treat	0.645	0.478	0.000	0.000	1.000	1.000	1.000
Size	22.43	1.303	18.93	21.53	22.25	23.13	28.61
Collateral	0.355	0.158	0.0003	0.239	0.341	0.457	0.941
Cash	0.164	0.105	0.0026	0.0908	0.138	0.207	0.915
ROA	0.0355	0.0655	-1.130	0.0135	0.0349	0.0639	0.880
Growth	0.428	17.28	-0.913	-0.0112	0.111	0.266	1878
Bank	0.141	0.122	0.000	0.0343	0.120	0.219	0.797
Board	8.551	1.611	3.000	7.000	9.000	9.00	18.00
Indepen	0.375	0.0548	0.200	0.333	0.333	0.429	0.800
Dual	0.278	0.448	0.000	0.000	0.000	1.000	1.000
Msh	0.0706	0.134	0.000	0.000	0.0026	0.0721	0.778
Shr1	33.33	14.41	1.840	22.31	31.07	42.65	89.99
HHI	0.0863	0.0801	0.0142	0.0341	0.0620	0.110	1.000
Market	0.111	0.120	-2.294	0.0516	0.101	0.166	0.753

5. Empirical Results

5.1. Parallel Trend Test

The premise of using the DID model to analyze the impact of a policy is that the model passes the parallel trend test, that is, whether the trade credit financing changes in the experimental group and the control group have the same trend before and after the implementation of the policy. In this paper, the staging dummy variable Post is divided into pre_5, pre_4, pre_3, pre_2, pre_1, current, post_1, post_2, post_3, post_4, corresponding to 2013-2022, respectively. The values are -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, respectively. In order to avoid the influence of multicollinearity, the first phase pre_1 is removed, and the remaining dummy variables are brought into the model for regression, and the confidence interval of the coefficients of each split dummy variable at 95% confidence level is obtained. As can be seen from Figure 1, each coefficient is not significantly different from 0, indicating that the model has passed parallel trend test.

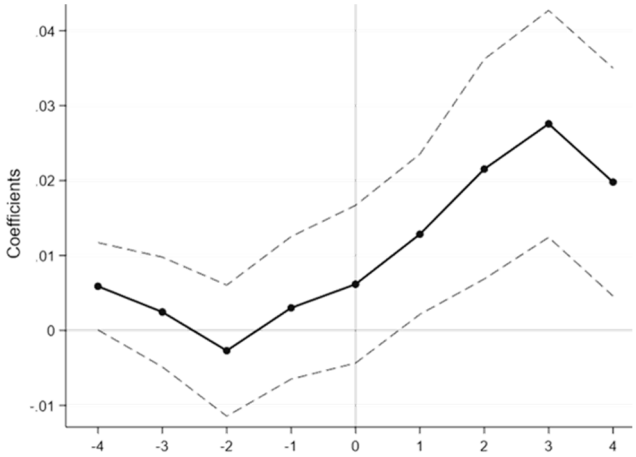

Figure 1. Parallel trend test

5.2. Baseline Regressions

In this paper, a difference-in-differences model is established to study the relationship between the new asset management regulations and the trade credit financing of enterprises. In Table 3, the coefficient of Did in column (1), 0.0127, is the regression result without adding control variables, and the coefficient of Did in column (2), 0.0125, is the regression result after adding control variables. It can be seen that whether control variables are added, the new asset management regulations have a positive effect on the trade credit financing, and it is significant at the level of 1%. This supports hypothesis 1. The reason may be that the policy has restricted shadow bank loans, so enterprises turn to trade credit financing to obtain easy and low-cost sources of funds.

6. Robustness Test

6.1. Replace the Dependent Variable

As different scholars have different definitions of trade credit financing, this paper uses the practices of Lu et al. [36], Huang and Wang [25] for reference, replacing the definitions of trade credit financing with (accounts payable + notes payable)/total assets and accounts payable/total assets respectively for robustness test. The regression results, as displayed in column (1) and column (2) in Table 4 respectively, show that the coefficient of Did is positive and significant at the level of 10%, which further verifies the promoting effect of the new asset management regulations on the trade credit financing of enterprises.

Table 3. Baseline regressions

Variable	(1)	(2)
	Credit	Credit
Did	0.0127***	0.0125***
	(5.815)	(3.361)
Post	-0.0297***	-0.0412***
	(-10.429)	(-7.269)
Treat	-0.0345***	-0.0334***
	(-7.959)	(-5.718)
Size		0.0132***
		(3.711)
Collateral		0.0920***
		(6.731)
Cash		-0.0132
		(-1.105)
ROA		-0.0416**
		(-2.021)
Growth		0.0178***
		(8.203)
Bank		-0.0918***
		(-6.460)
Board		0.00192
		(1.402)
Indepen		0.0223
		(0.737)
Dual		0.00111
		(0.414)
Msh		0.000447
		(0.036)
Shr1		-0.000224
		(-0.970)
HHI		-0.0698**
		(-2.543)
Market		-0.0203
		(-1.293)

Table 3. Baseline regressions (continued)

Variable	(1)	(2)
	Credit	Credit
Constant	0.239***	-0.0803
	(7.150)	(-0.929)
Individual fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Time fixed effect	Yes	Yes
N	12741	12741

Note: The model adopts heteroscedasticity robust standard error, and the t value is in parentheses. ***, ** and * indicate that they are significant at 1%, 5% and 10% levels respectively, the same below.

6.2. Add Control Variables

In order to reduce the impact of missing variables, the following control variables are added: current ratio, used to measure the short-term solvency of enterprises; Tobin's Q value, used to measure the value of enterprises; Regional GDP growth rate, used to measure the development of the region where the enterprise belongs to; M2 currency growth rate, used to measure the tightness of monetary policy. The regression results are shown in column (3) of Table 4, and the coefficient is still significantly positive.

6.3. Remove a Part of Sample

In 2015, a stock market crash occurred in China, which had a huge negative impact on macroeconomic and micro enterprises and investors. In order to eliminate the abnormal impact of the stock market crash on the economy in this year, all samples of enterprises in 2015 were removed. The regression results are shown in column (4) in Table 4, and the result is still significant.

6.4. Placebo Test

In order to exclude the influence of other policies or factors, this paper follows the practice of Liu [37] and advances the policy time by 3 years to observe whether the regression coefficient of Did is significant. As shown in column (5) of Table 4, the results show that the coefficient is not significant, indicating that the model has passed the placebo test.

Table 4. Robustness test

Variable	(1)	(2)	(3)	(4)	(5)
	Replace the dependent variable	Replace the dependent variable	Add control variables	Remove a part of sample	Placebo test
Did	0.00595**	0.00385*	0.00744**	0.0127***	0.00437
	(2.037)	(1.826)	(2.111)	(3.412)	(1.172)
Post	0.00777*	0.00224	-0.0421***	-0.0427***	-0.0380***
	(1.847)	(0.746)	(-6.251)	(-7.439)	(-6.788)
Treat	-0.0174***	-0.0111***	-0.0306***	-0.0327***	-0.0293***
	(-3.247)	(-2.967)	(-5.779)	(-5.350)	(-4.668)
Control	Yes	Yes	Yes	Yes	Yes
Constant	-0.0514	0.0146	0.0156	-0.100	-0.0865
	(-0.709)	(0.281)	(0.186)	(-1.141)	(-0.991)
Individual fixed effect	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes	Yes
N	12741	12741	12741	11345	12741

7. Mechanism Test

In order to verify the transmission role of financing constraints between the new asset management regulations and trade credit financing, this paper refers to the study of causal inference relationship by Jiang [38], and establishes a multiple regression model of financing constraints and new asset management regulations on the basis of equation (2) to test the mechanism of action:

$$Y_{i,t} = \beta_0 + \beta_1 Did_{i,t} + \beta_2 Post + \beta_3 Treat + \beta_{i,t} X_{i,t} + \mu_i + \eta_t + Ind + \varepsilon_{i,t} \quad (2)$$

$$SA_{i,t} = \beta_0 + \beta_1 Did_{i,t} + \beta_2 Post + \beta_3 Treat + \beta_{i,t} X_{i,t} + \mu_i + \eta_t + Ind + \varepsilon_{i,t} \quad (3)$$

The regression results of formula (2) and (3) are respectively shown in column (2) and (3) in Table 5. The coefficient of SA in column (3) is -0.0341, which is significant at the 1% level, indicating that the new asset management regulations can significantly increase the financing constraints of enterprises. Trade credit financing generally substitutes for bank credit in our country, and when financing constraints are increased, enterprises will rely more on trade credit financing, and the substitution of trade credit financing for bank credit will be stronger [39]. The policy restricts shadow bank financing to enterprises, resulting in increased financing constraints, so trade credit financing increases, as an alternative financing that enterprises rely on.

Table 5. Mechanism test

Variable	(1)	(2)
	Credit	SA
Did	0.0125***	-0.0341***
	(3.361)	(-9.099)
Post	-0.0412***	-0.317***
	(-7.269)	(-56.491)
Treat	-0.0334***	0.0339***
	(-5.718)	(5.715)
Control	Yes	Yes
Constant	-0.0803	-4.177***
	(-0.929)	(-32.327)
Individual fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Time fixed effect	Yes	Yes
N	12741	12741

8. Heterogeneity Analysis

8.1. The Development Level of Shadow Banking

In order to test hypothesis 3, this paper follows the practices of Cheng et al. [40], Deng and Zhang [41], adopts (entrusted loan increment + trust loan increment + undiscounted bank acceptance increment)/social financing increment to measure the development level of regional shadow banking, and obtains the development level of shadow banking in 31 provinces. The provinces with higher than average development level of shadow banking are classified as high development level group, and the provinces with lower than average development level are classified as low development level group, and the enterprises are corresponding to their provinces one by one. The regression results are shown in Table 7. In the group with low shadow banking development level, the coefficient of Did

was 0.00517, which was not significant. In the group with high shadow banking development level, the coefficient of Did was 0.0101, which was larger than that of the group with low level, and was significant at the 5% level. This may be because in areas with low shadow banking development level, enterprises are not as dependent on shadow banking as enterprises in areas with high development level, but have developed frequent trade credit financing. Therefore, in areas with low shadow banking development level, the new asset management regulations have no obvious positive effect on trade credit financing.

8.2. Collateral

In order to test hypothesis 4, this paper calculates the median Collateral of the sample, and classifies the enterprises whose collateral are higher than the median as high proportion group, and the enterprises whose collateral are lower than the median as low proportion group. The regression results are shown in Table 7. The coefficient of Did in the low proportion group is 0.0184, which is significant at 1% level, while the coefficient of Did in the low proportion group is 0.00648, which is not significant. It shows that enterprises with less collateral are more affected by the new asset management regulations, and have a higher demand for trade credit financing.

Table 6. Heterogeneity analysis

Variable	Low development level group	High development level group	Low proportion group	High proportion group
	Credit	Credit	Credit	Credit
Did	0.00517	0.0101**	0.0184***	0.00648
	(0.829)	(1.964)	(3.186)	(1.336)
Post	-0.0456***	-0.0295***	-0.0303***	-0.0530***
	(-6.018)	(-3.747)	(-3.413)	(-6.741)
Treat	-0.0338***	-0.0329***	-0.0476***	-0.0209***
	(-3.513)	(-4.923)	(-6.140)	(-2.631)
Control	Yes	Yes	Yes	Yes
Constant	-0.244**	0.0599	0.118	-0.0636
	(-2.132)	(0.512)	(0.812)	(-0.500)
Individual fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes
N	5582	7159	6373	6368

9. Conclusion and Policy Recommendation

Taking the annual financial data of China's A-share listed companies from 2013 to 2022 as samples, this paper analyzes the effect of new asset management regulations on trade credit financing by using the difference-in-differences model, and draws the following conclusions: (1) New asset management regulations can significantly promote the trade credit financing; (2) In terms of mechanism, the policy can promote trade credit financing by increase the financing constraints of enterprises; (3) In heterogeneity analysis, the trade credit financing of enterprises in developed areas of shadow banking or with less collateral is more promoted by the new asset management regulations. Therefore, some policy recommendations are put forward below:

First, strengthen communication between upstream and downstream enterprises in the supply chain. The upstream and downstream enterprises should strengthen the exchange of information, reach agreement on opinions as far as possible, abide by the spirit of contract, and enhance mutual understanding and trust, so as to increase the use of trade credit financing to alleviate short-term production, operation and turnover problems caused by financing constraints.

Second, establish a new loan evaluation system. Trade credit financing can only solve the problem of short-term financing. In order to meet the demand of enterprises for long-term production funds, it is necessary to establish a new loan review and evaluation system suitable for SMEs enterprises and private enterprises. The loan qualification of these enterprises should not be assessed according to the original standards, especially for large and state-owned enterprises, such as whether there is enough collateral. Professional loan staff under the new system should be trained to fully understand whether an enterprise has the ability to make profits, develop sustainably and repay loans through in-depth analysis of financial indicators and field visits.

Third, properly regulate and guide shadow banking. For areas with developed shadow banking, the focus of the policy is to guide shadow banking to reduce risks, gradually form low-risk, sustainable and healthy shadow banking business, provide low-cost loans for enterprises, and become a high-quality channel for enterprises to obtain long-term stable funds.

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