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A Study on the Impact of Chinese Monetary Policy on Enterprises' Accrual Earnings Management

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Abstract: As one of the important means for enterprises to carry out accrual earnings management activities, which mainly relate to the adjustment of accounting estimates and the use of accounting policies to make the values of relevant accounting subjects meet the needs of enterprise managers and reach other stakeholders' expectations. This paper empirically examines the relationship between changes in monetary policy and corporate accrual earnings management activities, by taking A-share companies from 2010 to 2020 in Shanghai and Shenzhen stock markets as the sample, and by classifying accrual earnings management activities into positive and negative, it more accurately captures the choice of accrual earnings management activities that companies tend to adopt in different periods. At the same time, this paper also analyzes the influence of ownership attributes on the management behavior of companies' accrual earnings management under different monetary policies from two aspects: state and non-state. By studying the influence of monetary policy on corporate accrual earnings adjustment, this dissertation is not only a supplement to previous researches on earnings management and monetary policy, but also points out new ideas for future research.

Keywords: Monetary Policy, Accrual Earnings Management.

1. Introduction

Since China relevant institution officially implemented the functions of the central bank in the 1980s, it gradually formed a diversified monetary policy system and became the leading country of monetary policy based on the advanced experience of foreign countries and the characteristics of the financial market, it has also become the main control of China's macro economy model.

This paper empirically tests the differences in earnings management behaviors of micro-enterprises based on earnings management motives during the days of monetary policy changes. This paper firstly examines relationship between monetary policy tightening and accrual earnings management, and then examines the distinct between the nature of enterprise ownership and earnings management during the tightening period, and finally draws a conclusion. The research of this paper has the following meanings:

Firstly, domestic and international studies on the correlation between monetary policy and accrual earnings adjustment are generally scarce. In relevant studies in the past, the metric model for accrued earnings management tends to adopt the basic Jones model designed based on the background of Western economic development, although the model uses manipulable accrual item profits to replace the accrual profits used in the previous mainstream model for the first time, it is to some extent not

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suitable for the actual situation in China due to the specificity of the Chinese economic model and related accounting policies .However, this paper adopts [1] modified extended Jones model [2], which takes into account the impact of intangible assets, long-term amortization and corporate special items, and provision for impairment on accrued profits, and is more in line with the reality.

Secondly, by aiming at the inherent characteristics of microenterprises, it studies the differences in the degree of influence of monetary policy on earnings management activities of different types of enterprises, and expands the research of macro-policy regulation on micro-real economic behavior, so it has certain theoretical significance.

The follow-up analysis structure of the paper includes: research review, theoretical analysis and hypothesis making, study design, empirical analysis, conclusions and deficiencies.

2. Research Review, Theoretical Analysis and Hypothesis Making

2.1. Research review

Earnings management refers to a behavior in which the management of an enterprise uses the accounting information of the enterprise to expand the benefits or profit of the company. And accrual earnings management behavior is the enterprise adjusts the accrued earnings of the project through flexible accounting policies and appropriate accounting estimates under the conditions permitted by the accounting standards will not have any impact on the actual business of the enterprise.

The intrinsic motivation of earnings management can be divided into two categories, one is the management of the enterprise to meet their own interests and needs, the other is the managements of the company maintain the company's image of various stakeholders to achieve the maximum benefit of the company. The external motivation of adopting earnings management behavior is mainly reflected in the response to the supervision of the government and relevant regulatory agencies and to meet relevant regulations to achieve fund-raising activities and listing behaviors.

[3] believed that earnings management is actually a process in which corporate management adjusts financial reports by selecting appropriate accounting policies or estimates for the sake of certain personal interests. [4] found that when a company has the possibility of debt default, it is more likely to maintain the trust of shareholders and investors by adjusting earnings makes it easier to improve a company's profitability. [5] found that when considering the relative performance of current and future, enterprise management will smooth the performance of the enterprise through earnings management activities because of concerns about job stability. [6] believed that the company management adopts an accrual-based earnings management approach to influence the capital market's perception of the company, improve managers' remuneration, reduce the risk of debt default and decrease the interference of relevant regulatory authorities. [7] proposed that for the sake of increasing the prices of the stock to be sold, managers with higher incentives of equity prefer to conduct earnings management. [8] found through empirical research that during the period of stock issuance, to meet the requirements of the market, the company will adopt the method of actual and accrued earnings management. [9] believed that facing with the earnings expectation of the capital market, the company's management is more inclined to earnings adjustment, which will affect the company's long-term development. [10] found that companies may could obtain more government grants by using negative earnings adjustment, which is reflected in the increase in occasional government subsidies. [11] confirmed the earnings management behavior of special motivation to achieve the purpose of leverage operation through empirical test.

Regarding the research about the impact of monetary policy on the accrued earnings management activities of enterprises, [12] found that macro monetary policy will have an impact on the activities of micro enterprises, especially the financing behavior of enterprises. [13] argue that during tightening periods of monetary policy, banks' credit policies will reduce the possibility of external financing for

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firms. [14] proposed that the acquisition of finance from bank is the main financing channel for enterprises, and the importance of banking institutions is far greater than that of the bond market. [15] research shows that when the financial decision-making of enterprises faces the shock of monetary policy, smaller companies respond more strongly than large companies. [16] found that monetary policy has a significant influence on the choice of corporate accounting policy, and during the days of tighter monetary policy, the impact of corporate earnings management behaviors with different governance structures is different. [17] paid more attention to the earnings adjustment of privately owned enterprises by banks, and it was more obvious during the period of tighter monetary policy. [18] confirmed that monetary policy can affect the debt financing of enterprises through the transmission mechanism of earnings management. [19] proposed that in order to improve the competitiveness for more credit resources in the tightening period of monetary policy, non-state-owned companies may have more motivation to manipulate the company's surplus. [20] showed that the implementation of tight monetary policy will influence the accrued earnings adjustment behavior of enterprises.

This paper reviews the influence of monetary policy on accrual earnings management, macro monetary policy does have an effect on the earnings management behavior of micro-enterprises through the bank's credit channel, and because bank credit is the most important financing channel for enterprises, so for small and micro enterprises such as non-state-owned enterprises, in order to maintain a certain degree of competitiveness, the motivation to adopt earnings management behavior seems to be more obvious. Therefore, analyzing the effect of monetary policy tightening promotion is practically significance.

2.2. Theoretical Analysis and Hypothesis Making

For the enterprise itself, there are many channels to obtain financing, such as banks, trusts and others, but for each creditor who provide financing, when selecting enterprises to provide funds, it is not only consider the accounting that reflects the profitability of the enterprise, other aspects of the company's data performance, such as the company's assetliability ratio, interest protection coefficient, etc., are also taken into account. The main purpose is to reduce risks and hope to recover funds as scheduled. This has prompted the emergence of corporate earnings management behavior, especially when monetary policy is tightened and the total supply of funds is small, companies have more earnings management motives in the competition for limited credit resources. At the same time, due to information asymmetry, an "information barrier" is formed between the enterprise management and stakeholders, which makes it more likely for the management to rely on its own information advantages to maximize its own interests. Management's actions distort corporate accounting and financial reporting. Accordingly, this paper proposes the first hypothesis:

H1: When monetary policy tends to be more tightened, the degree of corporate accrual earnings management will increase.

The ownership nature of an enterprise is one of the important properties reflecting the inherent characteristics of an enterprise, which defines the nature of an enterprise from the perspective of investment and ownership(the source of the enterprise's registered capital) .So it is very necessary to study the accrual earnings management behavior of enterprises in the monetary policy tightening periods from the perspective of enterprises' ownership nature. Generally speaking, depending on their ownership, companies can be divided into SOEs and Non-SOEs. State-owned enterprises are also called government-owned enterprises because they need to take into account the economic goals of maximizing profits and non-economic political goals such as social equity. Therefore, the links between state-owned enterprises and the state are closer, especially if state-owned enterprises are the main source of funds for local governments, they are more likely to obtain bank loans and intangible support. However, the weak links between private enterprises and the state make it difficult for private

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enterprises to receive the same guarantee from the government. When the monetary policy tends to tighten, due to the shortage of funds, and the lower credit of Non-SOEs ,the financing behavior faces more severe challenges, so Non-SOEs companies are more motivated to manage accrual earnings. For banks, when Non-SOEs enterprises are facing financial difficulties, the possibility of obtaining the government's bottom line is not high, which will make banks' lending risks higher. In order to reduce the possibility of losses, it will further increase the intensity of corporate regulation and restraint.

Therefore, although non-state-owned enterprises have stronger earnings management motives under the tightening monetary policy, due to the increasing prudence of banks in lending to Non-SOEs, it is more likely that accrued earnings management will be detected, non-state-owned enterprises will rarely choose accrued earnings management. Therefore, the second hypothesis can be proposed:

H2: Non-SOEs will manage accrual earnings to a lesser extent during monetary tightening period than SOEs.

3. Study Design

3.1. Model design and variable definition

The model constructed in this paper is as follows:

Hypothesis 1:

$$DA_{i,t} = \beta_0 + \beta_1 MPD_t + \beta_2 Lev_{i,t} + \beta_3 ROE_{i,t} + \beta_4 Q_{i,t} + \beta_5 Big4_{i,t} + \beta_6 Size_{i,t} + \sum Year + \varepsilon \quad (1)$$

$$DA_{i,t} = \beta_0 + \beta_1 MPD_t + \beta_2 MPD_t \times SOE_{i,t} + \beta_3 SOE_{i,t} + \beta_4 Lev_{i,t} + \beta_4 ROE_{i,t} + \beta_5 Q_{i,t} + \beta_6 Big4_{i,t} + \beta_7 Size_{i,t} + \sum Year + \varepsilon \quad (2)$$

The variables in the model are defined as follows:

3.1.1. Dependent Variables.

$DA_{i,t}$ measures the accrual earnings management, by adopting the extended Jones model proposed by [2] on the basis of the revised Jones model, which further considers the value of intangible assets and long-term assets based on primary business income and fixed asset depreciation. The impact of prepaid expenses. The estimated parameters α1, α2, α3, α4 are obtained through the regression of the annual cross-section of formula (4), and are brought into formula (5) to estimate the uncontrollable accrual profit $NDA_{i,t}$ of enterprise i in period t. The ratio of controllable accrual profit to assets $DA_{i,t}$ is equal to the ratio of the difference between total accrued profit minus non-controllable accrual profit and total assets at the end of the previous period. The accrual earnings management $DA_{i,t}$ required in this paper is the value after taking the absolute value. The larger the number, the higher the level of accrual earnings adjustment of the enterprise.

[1] improved the total accrued profit part of the Lu Jianqiao model, using the method of cash flow calculation to reduce the overestimation of controllable accrual profit. The relevant formula is as follows:

$$TA_{i,t} = EBXI_t + \Delta BDR_t + \Delta IFPR_t - \Delta ADR_t - CFO_t \quad (3)$$

$TA_{i,t}$ represents the enterprise i total accrual profit in t period,$EBXI_t$ indicates the profit before non-recurring items, that is, the operating profit,ΔBDR_t is the change in bad debt provision for year

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t,$\Delta IFPR_t$ is the change in provision for inventory depreciation in year t,$\Delta ADR_t$is the change in provision for impairment of assets in year t,CFO_t indicates the cash flow from operating activities.

$$\frac{TA_{i,t}}{A_{i,t-1}} = \alpha_1(\frac{1}{A_{i,t-1}}) + \alpha_2 \frac{\Delta REV_{i,t}-\Delta REC_{i,t}}{A_{i,t-1}} + \alpha_3 \frac{PPE_{i.t}}{A_{i,t-1}} + \alpha_4 \frac{IA_{i,t}}{A_{i,t-1}} + \varepsilon \quad (4)$$

$$NDA_{i,t} = \alpha_1(\frac{1}{A_{i,t-1}}) + \alpha_2 \frac{\Delta REV_{i,t}-\Delta REC_{i,t}}{A_{i,t-1}} + \alpha_3 \frac{PPE_{i.t}}{A_{i,t-1}} + \alpha_4 \frac{IA_{i,t}}{A_{i,t-1}} \quad (5)$$

$$DA_{i,t} = \frac{TA_{i,t}}{A_{i,t-1}} - NDA_{i,t} \quad (6)$$

$A_{i,t-1}$is the total assets at t-1，$\Delta REV_{i,t}$ is the change of main business income in t，$\Delta REC_{i,t}$ is the change of accounts receivable at t，$PPE_{i.t}$ is the original value of fixed assets at t，$IA_{i,t}$ is the intangible assets at t,， ε is the residual term.

Table1: Improved Extended Jones Model Regression Results.

Variable	Coefficient
$\frac{1}{A_{i,t-1}}$	13827436*** (38.53)
$\frac{\Delta REV_{i,t}-\Delta REC_{i,t}}{A_{i,t-1}}$	-0.00569*** (-3.769)
$\frac{PPE_{i.t}}{A_{i,t-1}}$	-0.197*** (-11.29)
$\frac{IA_{i,t}}{A_{i,t-1}}$	-0.346*** (-5.229)
R^2	0.823

Note: *** represents 1% level of significance, ** represents 5% level of significance, * represents 10% level of significance, the numbers in parentheses are t values.

Therefore, the values of the estimated parameters α1, α2, α3 and α4 are the results of the regression coefficients. So equation (5) can be written as:

$$NDA_{i,t} = 13827436 \times (\frac{1}{A_{i,t-1}}) - 0.00569 \times \frac{\Delta REV_{i,t}-\Delta REC_{i,t}}{A_{i,t-1}} - 0.197 \times \frac{PPE_{i.t}}{A_{i,t-1}} - 0.346 \times \frac{IA_{i,t}}{A_{i,t-1}} \quad (7)$$

3.1.2. Independent variable.

MPD_t is the metric of monetary policy， In this paper, we adopt the measurement method proposed by [21], which is calculated as：

$$MP_t = \Delta M2_t - \Delta GDP_t - \Delta CPI_t \quad (8)$$

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MP_t is the degree of monetary policy tightness in t,$\Delta M2_t$ is money supply change in t,$\Delta GDP_t$is the level of GDP change,ΔCPI_t is the level of change in the consumer price index.The larger the number, the more accommodative monetary policy is; conversely, it tends to tighten. Therefore, from 2010 to 2020, years greater than the MP mean are defined as monetary policy easing years with MPD = 0 and years less than the mean are defined as monetary policy tightening years with MPD = 1.

3.1.3. Control variables.

Selecting the control variables that affect the main factors of enterprise earnings management, including enterprise size, debt to asset ratio, return on equity, whether audited by a Big 4 accounting firm, Tobin's Q ratio, and annual dummy variables.

3.2. Sample selection

This paper uses the 2010-2020 A-share listed companies on two main stock exchanges markets based in Shanghai and Shenzhen as data sample for analysis, and for improving the accuracy of the research and analysis, the data is screened according to the following steps : (1) Exclude B-share and H-share cross-listed companies to reduce the impact caused by international market fluctuations; (2) Exclude financial listed companies, because the way financial companies such as securities and insurance prepare financial statements is different from that of companies in other industries. (3) Eliminate ST listed companies and samples with missing financial data in the time interval. After the above processing, the sample data of a total of 1409 companies from 2010 to 2020 are obtained.

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Table2: Control Variable.

Kind of variable	Symbol	Name	Definition
Dependent variable	DA	Accrual earnings management	Controllable accrued profit/Total assets of previous year end (Absolute value)
Independent variable	MPD	Monetary policy	Dummy variable, monetary policy tightening period = 1, otherwise = 0
	SOE	Nature of business ownership	Non-SOEs = 1, SOEs = 0
Control variable	Size	Enterprise size	Ln(business assets)
	Lev	Debt to asset ratio	Total liabilities at end of year / Total assets at end of year
	ROE	Return on equity	Net profit / (average of total assets of the year end and total assets at the of the year begin)
	Big4	Big Four accounting firms	Disclosure of key audit matters by a Big 4 firm = 1; Disclosure of key audit matters by a non-Big 4 firm = 0
	Q	Tobin's Q Ratio	Market value/Replacement cost of capital
	Year	Annual dummy variable	11 annual dummy variables

4. Empirical Analysis

4.1. Descriptive Statistical Analysis and Correlation Analysis

Table 3. lists the descriptive statistical results of the variables of companies samples after screening. Among them, the average value of the accrual earnings management substitute variable DA is 0.0038, which shows that the generally, the earnings management activities of listed companies is not large. After dividing DA into positive and negative, the average positive earnings adjustment number is 0.0632, and the mean value of negative earnings management is -0.0739, which shows that the listed companies have carried out positive or negative earnings to a certain extent. And in terms of quantity, more listed companies choose positive earnings management.

The average amount of the monetary policy variable MPD is 0.657, indicating that 65.7% of the data samples are taken from the monetary policy tightening period. The average SOE was 0.626,

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which means that among all the samples there are about two-thirds of Non-SOEs and one-third of SOEs.

For the control variables, the standard deviation of ROE between enterprises is 0.0340, indicating that the difference in profitability between enterprises is not large. The mean number of the variable Big4 is 0.0742, which illustrates that about 7.4% of the sample companies are audited by the specific four accounting firms.

Table3: Variable Descriptive Statistics.

Var	N	Mean	Std.	Min	P25	Med	P75	Max
DA	13347	0.0038	0.1040	-0.6170	-0.0339	0.00972	0.0517	0.6290
DA+	7564	0.0632	0.0632	0.0023	0.0209	0.0446	0.0842	0.6290
DA-	5783	-0.0739	0.0840	-0.6170	-0.0974	-0.0432	-0.0183	-0.0032
MPD	13347	0.6570	0.4750	0	0	1	1	1
SOE	13347	0.6260	0.4840	0	0	1	1	1
Lev	13347	0.4430	0.2060	0.0750	0.2830	0.4401	0.5980	1.1790
ROE	13347	0.0779	0.0340	-0.0731	0.0138	0.0614	0.0931	0.1135
Q	13347	2.4510	1.6850	0.6830	1.3080	1.8330	2.7720	9.8350
Big4	13347	0.0742	0.2620	0	0	0	0	1
Size	13347	22.43	1.367	15.98	21.45	22.22	23.20	28.64

4.2. Correlation Statistical Analysis

Table4: Pearson Correlation Coefficient.

	DA	MPD	SOE	Lev	ROE	Q
DA	1					
MPD	0.0154***	1				
SOE	-0.0279***	-0.0467***	1			
Lev	0.0632***	-0.0034	-0.3168***	1		
ROE	-0.1058***	0.0088	0.0055	-0.1009***	1	
Q	0.0483***	-0.0399***	0.0512***	-0.0716***	0.0176**	1
Big4	-0.0381***	-0.0174**	-0.1611***	0.1244***	0.0270***	-0.0207**
Size	-0.1148***	-0.1523***	-0.3910***	0.5322***	0.0378***	-0.1210***
	Big4	Size				
Big4	1					
Size	0.3835***	1				

Note: ***represents 1% level of significance, ** represents 5% level of significance, * represents 10% level of significance.

Table 4. illustrates the outcomes of testing the correlation between the main variables. It can be seen from the table that at the level of 1%, there is a significant positive relation between the accrual earning adjustment variable and the monetary policy variable, and the correlation coefficient is 0.01541, while the variables of accrual earnings adjustment and the nature of enterprise ownership

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are negatively connected at the 1% level, and the correlation coefficient is -0.0279.It also verifies the correctness of Hypothesis 1 and Hypothesis 2 to a certain extent. There is also a significant linear relationship between the explained variable and other control variables. The debt-to-equity ratio, Tobin's Q value and accrual earnings management showed a significant positive correlation at the level of 1%, while ROE, Big4, enterprise size and accrual earnings management showed a negative correlation at the level of 1%,which indicates that the selected explanatory variables can explain the level of accrual earnings management well.

In addition, although the explanatory variables are correlated, since the correlation coefficient is not higher than the critical value of collinearity of 0.8, it can be judged that it is less likely that the case of multicollinearity in the model established exists in this paper .

4.3. Model regression analysis

4.3.1. Monetary Policy and Accrued Earnings Management.

Firstly, examining the relationship between monetary policy and accrual earnings management,seeing the outcomes in Table 5. The regression outcomes show that at the level of 1%, there is a significant positive association between the accrual earnings management proxy variable DA and the monetary policy proxy variable MPD, which indicates that tighter the monetary policy is, the higher the degree of companies' accrual earnings adjustment activities is , and vice versa. To make the research more precise, after dividing the accrual earnings management variables into positive and negative directions and regressing respectively, the results show that the positive accrual earnings management variable DA+ is positively correlated with monetary policy MPD at 1% level. This shows that when monetary policy tends to tighten, the degree of positive accrual earnings management behavior of enterprises is higher, and when monetary policy tends to loosen, the level of positive accrual earnings adjustment behaviors is lower. There is no significant association between negative accrual earnings adjustment variable DA- and monetary policy variable MPD.

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Table5: Monetary Policy and Accrual Earnings Management Regression Results.

	DA	DA+	DA-
MPD	0.0737***	0.0415***	0.0137
	(17.71)	(12.17)	(0.23)
Lev	0.0351***	0.0296***	0.0595***
	(7.35)	(7.04)	(10.68)
ROE	-0.0453***	-0.0141***	-0.0416***
	(-18.80)	(-5.86)	(-16.85)
Q	0.000393***	0.00177***	0.000350***
	(4.18)	(3.91)	(4.80)
Big4	-0.0190***	-0.00879**	-0.0132***
	（-5.64）	(-2.99)	(-3.47)
Size	-0.00757***	-0.00112	-0.0122***
	(-9.51)	(-1.57)	(-13.38)
Const	-0.167***	0.0482**	-0.305***
	(-9.67)	(3.00)	(-15.44)
Year	controlled	controlled	controlled
N	13347	7564	5783
R^2	0.194	0.118	0.277

Note: ***represents 1% level of significance, ** represents 5% level of significance, * represents 10% level of significance, the numbers in parentheses are t values.

4.3.2. Monetary Policy, Nature of Ownership and Accrual Earnings Management.

By introducing the nature of enterprise ownership, enterprises are divided into SOEs and Non-SOEs, the samples are brought into the model established by Hypothesis 2 for regression analysis. The regression results indicate that the accrual earnings adjustment variables DA and positive accrual earnings management variables DA+ have a significant positive correlation with monetary policy MPD at the level of 1%. However, the relationship between negative accrual earnings management variables DA- and monetary policy variable MPD is not significantly correlated, which means the Hypothesis 1 does make sense . The coefficient of the interaction item MPD×SOE is significantly negative at the 1% level, which is corresponding with the expectation of Hypothesis 2.It shows that during the monetary policy tightening period, the Non-SOEs' earnings management behavior is weakened relative to SOEs. After dividing earnings management into positive and negative, it can be found that for positive earnings management DA+, the coefficient of interaction term MPD×SOE is significantly negative at the level of 5%, which is to say, for Non-SOEs ,when monetary policy tends to tighten, the positive accrual earnings management is lower than that of SOEs to a certain extent, while there is no significant relationship between negative accrual earnings management variable DA- and the interaction term MPD × SOE, which means that during such a time , the nature of ownership has no significant correlation with negative accrual earnings management behavior.

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Table6: Regression Outcomes of Monetary Policy, Enterprise Ownership and Accrual Earnings Management.

	DA	DA+	DA-
MPD	0.0721***	0.0365***	0.0151
	(15.19)	(9.19)	(1.29)
MPD×SOE	-0.00211***	-0.00975**	-0.00558
	(-3.59)	(-3.03)	(-1.38)
SOE	-0.00312***	-0.00289***	-0.00122
	(-4.70)	(-3.57)	(-0.37)
Lev	0.0352***	0.0311***	0.0614***
	(7.32)	(7.36)	(10.92)
ROE	-0.0453***	-0.0140***	-0.0416***
	(-18.81)	(-5.84)	(-16.84)
Q	0.000392***	0.00184***	0.000354***
	(4.16)	(4.05)	(4.85)
Big4	-0.0190***	-0.00848**	-0.0132***
	(-5.63)	(-2.89)	(-3.47)
Size	-0.00747***	-0.000677	-0.0116***
	(-8.97)	(-0.92)	(-12.11)
Const	-0.163***	0.0392*	-0.290***
	(-8.69)	(2.29)	(-13.39)
Year	controlled	controlled	controlled
N	13347	7564	5783
R^2	0.194	0.120	0.278

Note: ***represents 1% level of significance, ** represents 5% level of significance, * represents 10% level of significance, the numbers in parentheses are t values.

4.4. Robustness Tests

To double test the correctness of the above regression analysis, this paper adopts a reduced sample size approach to conduct robustness tests. The results are shown in the table. For Hypothesis 1, the monetary policy proxy variable MPD is significantly positively correlated with DA, indicating that there is a significant positive association between the degree of monetary policy tightening and the accrual earnings management behaviour implemented by firms. In response to Hypothesis 2, the coefficient of the interaction term MPD×SOE is -0.00111, indicating that the nature of ownership of Non-SOEs undermines the behaviour of enterprises in implementing positive accrual earnings management activities during the monetary policy tightening period at the 5% level of significance, further validating the reliability and robustness of the regression results.

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Table7: Robustness test regression results.

	DA	DA+	DA-	DA	DA+	DA-
MPD	0.0688***	0.0310***	0.0241**	0.0678***	0.0305***	0.0215*
	(18.17)	(10.28)	(3.09)	(15.30)	(8.29)	(2.27)
Lev	0.0536***	0.0168***	0.0553***	0.0537***	0.0167***	0.0554***
	(25.65)	(8.20)	(20.50)	(25.65)	(8.18)	(20.53)
ROE	-0.0457***	-0.0320***	-0.0815***	-0.0459***	-0.0331***	-0.0836***
	(-10.65)	(-8.19)	(-13.82)	(-10.58)	(-8.39)	(-14.01)
Q	0.00121***	0.00241***	0.00110**	0.00122***	0.00242***	0.00112**
	(3.77)	(6.39)	(3.07)	(3.79)	(6.40)	(3.03)
Big4	-0.0134***	-0.00459	-0.00984*	-0.0134***	-0.00435	-0.00993*
	(-3.99)	(-1.50)	(-2.22)	(-4.00)	(-1.42)	(-2.24)
Size	0.00842***	-0.00168*	0.0138***	0.00832***	-0.00139	0.0131***
	(10.77)	(-2.38)	(12.90)	(10.36)	(-1.92)	(11.87)
MPD × SOE				-0.00111**	-0.00196**	-0.000234
				(-2.94)	(-2.96)	(-0.05)
SOE				-0.00152**	-0.00171**	-0.00622
				(-3..07)	(-2.97)	(-1.79)
Const	-0.179***	0.0623***	-0.333***	-0.176***	0.0539**	-0.312***
	(-10.48)	(3.99)	(-14.39)	(-9.72)	(2.89)	(-12.64)
Year	controlled	controlled	controlled	controlled	controlled	controlled
N	12765	7338	5427	12765	7338	5427
R^2	0.319	0.169	0.345	0.319	0.170	0.346

Note: ***represents 1% level of significance, ** represents 5% level of significance, * represents 10% level of significance, the numbers in parentheses are t values.

5. Conclusion

5.1. Conclusion

This paper uses the 2010-2020 A-share listed companies on two main stock exchanges markets based in Shanghai and Shenzhen as data samples to empirically test the relationship between monetary policy changes and enterprise accrual earnings management activities. And divides accrual earnings management activities into positive and negative can more accurately understand the choice of accrued earnings management activities that enterprises tend to take in different periods, and by dividing enterprises into SOEs and Non-SOEs, exploring how the nature of enterprise ownership affects the choice of accrued earnings management activities levels under the circumstances of monetary policy changes. The following research conclusions were obtained:

Firstly, generally, monetary policy tightening has a significant positive correlation with the positive accrual earnings management activities of enterprises, while there is no significant relationship between it and the negative accrual earnings management activities of enterprises.

Secondly, compared with SOEs, Non-SOEs weakened the positive relationship between monetary policy tightening and the level of positive accrual earnings adjustment activities adopted by companies, but had no significant influence on the degree of negative accrual earnings adjustment

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behaviors of companies. According to the specific situation in China, this paper separate the companies into two categories, and discusses the role of monetary policy on different enterprises respectively.

5.2. Deficiencies

First of all, this paper uses the measurement approach proposed by [21] for the measurement of monetary policy ($MP_t = \Delta M2_t - \Delta GDP_t - \Delta CPI_t$), but this method has not been widely used. Whether this indicator can accurately define the tightening and easing of monetary policy still needs to be confirmed. The way to measure the degree of tightening by using the monetary policy dummy variable divided by the year is slightly simple. At the same time, the impact of macro-policy on the behavior of micro-subjects has a lag, so there may be time deviations from the earnings management behavior of enterprises. Secondly, this paper only selects the ownership nature of the enterprise as a variable, but in the actual process of the impact of monetary policy on enterprise accrual earnings management, there are many related factors that may have an impact, such as the future growth of the enterprise and financing constraints, etc. This provides new possibilities for follow-up research.

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