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# Research on the Impact of New Securities Law on Earnings Management of Listed Companies

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***Abstract:*** *Based on a sample of A-share non-financial listed companies under the approval system from 2017 to 2020, this paper examines the impact of new Securities Law on corporate earnings management behavior. The study found that compared with companies without material internal control deficiencies, the earnings management level of companies with major internal control defects decreases more after the implementation of the New Securities Law. This phenomenon is more pronounced when the company has academic independent directors and analyst coverage is higher. Further analysis shows that the new Securities Law affects the earnings management by improving the quality of internal control and strengthening external supervision. This paper not only enriches the research on law and earnings management, but also provides evidence for the implementation effect of the new Securities Law.*

***Keywords:*** *New Securities Law; Earnings management; Internal control; Regulatory intensity.*

## 1. Introduction

Accounting information, as an important basis for value judgment and investment decisions of all parties in capital market transactions, plays a vital role in capital pricing, contract signing and government and market supervision. Therefore, the more important and widely used accounting information is, the easier it is to be manipulated and utilized. At present, a large number of literature have proved that management is motivated by compensation contract (Healy, 1985; Jianxin Wang, 2007), debt contract (Sweeney, 1994; Zhengfei Lu et al., 2008) [10,25], catering (Bartov et al., 2002; Hong Xiao et al., 2012), financing (Cohen et al., 2011; Weidong Zhang, 2010) [2,36],evading regulation (Yuanpeng Li et al., 2007; Kangtao Ye et al., 2016) and other self-interested motivation to manipulate the company's earnings in order to maximize personal interests. However, most academic studies on earnings management focus on the micro and medium level. There are few studies on the relationship between laws and earnings management from the perspective of macro policies. 2020 is a turning point year for China's capital market. On December 28, 2019, the 15th Meeting of the 13th NPC Standing Committee deliberated and adopted the revised Securities Law of the People's Republic of China (the New Securities Law), and officially entered into force on March 1, 2020. Compared with the securities law before 2019, the new Securities Law places more emphasis on the leading role of market forces, and entrusts internal and external regulators with significant supervision responsibilities. This revision has made significant amendments to many contents, especially information disclosure, managers' responsibilities and securities issuance procedures, which further increases the difficulty of managers' opportunistic earnings management and strengthens the internal and external supervision of daily earnings management of companies. Therefore, it is necessary to study the impact of policy changes on earnings management from the perspective of law and financial.

Based on this, this paper explores the impact of the new Securities Law on earnings management of listed companies. The research finds that after the implementation of the new Securities Law, compared with companies without major internal control defects, the earnings management level of companies with major internal control defects will be suppressed to a greater extent. When the company has academic independent directors or is high analysts' attention, the inhibition effect will be stronger. Further analysis shows that the new Securities Law mainly inhibits earnings management through two mechanisms: one is to strengthen the supervision and restriction of management by improving the quality of internal control of companies, so as to reduce the space for managers to conduct opportunistic earnings management; the other is to limit the means of earnings management by strengthening the supervision of relevant external regulatory agencies, so as to restrain the earnings management level of the company.

This paper has three contributions. First, this paper studies the net effect of the changes in macro laws

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and policies on earnings management based on the introduction of the new Securities Law, which can enrich the literature research of surplus management and enhance our understanding of the new Securities Law. Second, this paper puts the law and corporate behavior under the same framework and examines the changes in the behavior of listed companies in China from the perspective of policy introduction, providing new evidence for the research field of "law and corporate behavior". Thirdly, by studying the impact of the implementation of the new Securities Law on earnings management, this paper can provide some reference for the market regulatory authorities to improve the regulatory system. Meanwhile, it is instructive to create a standardized, transparent, open, dynamic and resilient capital market in the future successfully.

## 2. Literature review and research hypothesis

### *2.1. Literature review*

Higher quality earnings provide more information about corporate financial (Patricia Dechow et al., 2010). However, under the influence of micro and meso factors, corporate managers are motivated to manipulate earnings so as to achieve specific management goals and personal interests. So, earnings management, as the most direct and common means to change the real situation of earnings in the operation of a company (Yong Du, 2018) [17], is widespread in companies. In terms of management compensation, in order to alleviate the principal-agent problem, compensation incentive has become the preferred and most important method for the company. However, it may also lead to moral hazard and adverse selection while improving the work effort of the management (Holmstrom B, 1979) [7]. For example, compensation incentive method based on company performance (Miao Li, Wenxiu Hu; 2020; Bergstresser, Philippon, 2006; Efendi et al., 2007) [27,1,5] and CEO pay gap between companies (Ma et al., 2020) [9] may induce management to carry out more earnings management behaviors to obtain excess remuneration. In terms of governance environment, earnings management has attracted the attention of all stakeholders. As the internal supervisor of the company, independent directors' reputation (Haijie Huang et al., 2016) [22] have governance effects on earnings management. Meanwhile, the internal control system is an indispensable for the internal governance. Many studies have proved companies can reduce earnings management by improving the internal control system (Zhaoying Guo, 2020) [20]. However, a complete governance system is inseparable from the internal and external environment and supervisors. In the capital market which is not fully effective, the interests of investors is closely related to the analysts, environment and auditing,etc. Analyst ratings static and dynamic change, auditor with expert-assisted, a tightly regulated market, and supervision with greater uncertainty all affect the company's earnings management level (Chunling Li, Jiang Shao, 2020; Muhua Liu, Xiao Lei, 2020; Kai Zhu et al., 2021; Xuejiao Sun et al., 2021; Pu Gu, Shiyun Zhai ,2020) [26,28,35,30,21]. Although these studies have proved that both micro and meso factors will lead to corresponding changes in corporate earnings management, few literatures have studied the relationship between law and earnings management.

No matter what the factors affect earnings management, managers' personal responsibility and motivation is the fundamental. Katherine Schipper believes that the essence of earnings management is a kind of "disclosure management" in which the managers obtain some private interests by control the specific content and process of external financial reporting. So, they have a strong incentive to manage earnings. The higher the level of earnings management, the lower the quality of accounting information of the company. Once the occurrence of financial irregularities, it will cause a series of negative economic consequences and affect investors' value judgment and investment choice, such as reducing the efficiency of resource allocation (Jun Huang, Ting Li, 2016) [23], increasing the possibility of being acquired again (Wenting Chen et al., 2021) [13]and increasing over-investment and under-investment (Yiting Xian, Xingmei Zhao, 2021) [32], etc. For investors, earnings management is also closely related to their personal interests. The opaquer the information environment of a company is, the higher its investment risk and violation risk will be. Therefore, the new Securities Law officially, implemented in China in 2020, has made significant amendments in terms of managers' responsibility and investor protection. Whether the strict supervision policy of the new law can effectively restrain earnings management of listed companies has also become the focus of academic circles.

### *2.2. Research hypothesis*

On March 1, 2020, China's new Securities Law was formally implemented, which made detailed provisions on the responsibilities of managers and investor protection. From the responsibility of managers, on the one hand, while investigating the illegal liability of companies, the new law expands the scope of the subject of responsibility to managers, and makes clear the presumption of fault and joint and several compensation liability in information disclosure. The scope of administrative responsibility is also expanded from the intentional illegal acts to concealment of illegal acts. On the other hand, the new law increases penalties for illegal acts committed by those responsible. For example, in Article 197 of Chapter 13 if the report and information contain false records, misleading statements or major omissions, it will be ordered to make corrections, given a warning, and imposed a fine of between one million and 10 million yuan. The maximum penalty raised from 600,000 to 10 million yuan. The new law increases managers' responsibility and violation cost. As a result, managers' motivation for earnings management will be weakened and earnings management level will be reduced in order to avoid being the focus of supervision. From investor protection, the new Law readjusts the procedures of securities issuance, abolishes the issuance committee system, and transfers the examination and issuance to the exchange. This makes the supervision focus of the market regulator shift to the company after listing, and strengthens the external supervision of the daily management of the company. Meanwhile, the act introduces the securities representative litigation system, forming the Chinese version of class action lawsuit of "express withdrawal, implied entry". It not only strengthens the protection of investors, but also a beneficial supplement to the market external supervision

As the typical internal governance mechanism, internal control can not only supervise and restrain the managers' behavior of the company management, also can effectively reduce the company's investment risk. so, the effective internal control is very important to enterprise's sustainable development. However, in view of the current development of China's capital market, the events that listed companies are punished for financial irregularities and fraud occurred frequently. It shows that many companies' control mechanism still has varying degrees of defects. Studies have shown that companies with internal control defects have a relatively high degree of earnings management (Kun Gao, 2017) [18], and face higher operational risks (Doyle et al., 2007) [4]. Therefore, compared with companies without major internal control defects, the manager of these companies has a large space and opportunity for earnings management. With the implementation of the new Securities Law, regulators will comprehensively regulate information disclosure review and accountability for violations and the new law will further strengthen the restraint and supervision on the management of companies with major defects in internal control, so as to inhibit the earnings management and protect the relevant interests of investors effectively. Based on the analysis, we propose hypothesis H1:

Hypothesis H1: After the implementation of the New Securities Law, the earnings management level of companies with major defects in internal control will decrease more than those companies without major defects in internal control.

Independent directors are an important part of corporate governance and internal supervision in China. According to the statistics of Quan and Li (2016) [11], about 43.51% of independent directors come from universities, research institutes and other public institutions with academic backgrounds. Studies suggest that academic independent director can play a supervisory role more effectively (Rui Xiang, Congmin Song, 2019; Huang Haijie et al., 2016) [34,22]. On the one hand, independent directors with academic background has a strong knowledge and meticulous logical thinking.They can make independent judgments, offer valuable opinions, not swayed by others (Congmin Song, 2019)[34] and urge managers to constantly improve the internal control system of the company (Fenglian Gao et al., 2020)[19]. On the other hand, academic independent directors enjoy a high reputation in the market based on their identity as researchers or teachers, and their language and behavior will be widely concerned by all walks of life. Under the strong restriction of reputation incentive mechanism, once they have malfeasance, their social influence will be stronger than those with low education level, thus causing reputation loss. Many studies have indicated that the higher the education level and reputation of independent directors are, the more they can play a governance role and improve the quality of corporate earnings (Haijie Huang et al., 2016; lei Chen, Guozheng Li, 2016) [22,14]. Therefore, In the context of the new Securities Law, such independent boards, with their advantages of strong ability and consideration for personal reputation and career development, will more fully fulfill their duties, actively perform their supervisory duties, and strengthen the supervision of earnings management of listed companies with major risks of internal control, so as to reduce the earnings management. Based on the above analysis,we proposes hypothesis H2:

Hypothesis H2: After the implementation of the new Securities Law, the difference of earnings management level decline between companies with major defects in internal control and companies without major defects in internal control is greater when the company has academic independent directors.

A company's perfect governance system not only needs the support of internal supervision, but also needs the supplement of external supervision. Analysts are an important link between the capital market, investors and companies. According to the monitor hypothesis, because of the high information

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asymmetry of China's capital market, analysts provide oversight and information transmission. It can not only expand the investors access to sources of information, also be able to give full play to the supervisory function to effectively restrain opportunistic earnings management (Fang, etc., 2008) [6]. Specifically, there are two ways for analysts to play a supervisory role: direct supervision and indirect supervision. Direct supervision is referring to analysts with their own knowledge, experience and analytical ability conduct field research, analysis and produce research reports on listed companies. The more attention analysts pay, the more easily earnings management of listed companies can be discovered, and thus earnings manipulation can be restrained. (Wang Shuangjin, Juan Chang, 2020) [31]. Indirect supervision refers to that analysts can make the company's stakeholders and external regulatory agencies obtain more information by improving the information environment of different market entities (Jarrad Harford et al., 2019) [8], which increases the external supervision of the company and make it difficult for the management to carry out earnings management (Xiding Chen et al., 2016) [15]. In March 2020, China's new Securities Law was issued. This policy not only emphasizes the supervision of companies with major defects in internal control, but also clarifies the responsibilities of securities institutions as gatekeepers of the capital market are also clearly defined in Chapter 13 of the document. Therefore, under the dual supervision mechanism of external regulations and analysts, the opportunistic earnings management is more likely to be detected, and the probability of securities institutions being punished increases. The manager of companies with major defects in internal control will be more cautious and earnings management level will further decline. Based on the above analysis, we propose hypothesis H3:

Hypothesis H3: after the issuance of the new Securities Law, the more analysts pay attention to it, the more earnings management level of companies with major defects in internal control decreases than those without.

## 3. Research design

### *3.1. Sample selection and data sources*

The sample data are selected from all A-share listed companies in China's Shanghai and Shenzhen Stock Exchanges from 2017 to 2020. Then screen the sample according to the following conditions:

Excluding the samples that have been ST and *ST before the issuance of the New Securities Law.

Removing all samples from the financial sector.

Excluding the samples that were newly listed, unlisted or suspended.

Excluding the samples listed on the Science and Technology Innovation Board and gem after the registration system reform.

Excluding the samples with missing relevant financial data and outliers.

We obtain 11,528 firms-year observations.

The data of major defects in internal control come from Dibo database, and others such as financial data come from CSMAR database. In order to eliminate the influence of extreme values on the test results, we indent all continuous variables at 1% and 99% levels.

### *3.2. Variables*

#### *3.2.1. The dependent variable*

Corporate earnings management can be divided into real earnings management (RM) and accrued earnings management (DA). Compared with real earnings management, accrual earnings management is easier to be identified by regulators or investors. Studies have found that the implementation of Sarbanes-Oxley Act, strict information quality supervision and numerous analyst tracking (Chuntao Li et al., 2016) [24] will inhibit the accrual earnings management of corporate management (Fangfei Ding et al., 2021) [16]. Therefore, the introduction of the new Securities Law will strengthen the control of the quality of accounting information of listed companies, increase the compliance risk of accrued earnings management and have a greater impact on the accrued earnings management of listed companies.

Based on this, the study of earnings management in this paper mainly focuses on accrued earnings management (DA). We use the modified Jones model to calculate accrued earnings management (Dechow et al. ,1995) [3], as shown in Formula (1):

ISSN 2616-5902 Vol. 4, Issue 8: 69-80, DOI: 10.25236/AJBM.2022.040811

$$\frac{TA_{it}}{A_{it-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{it-1}} + \alpha_2 \frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} + \alpha_3 \frac{PPE_{it}}{A_{it-1}} + \varepsilon \quad (1)$$

The larger the absolute value of DA is, the higher the degree of earnings management is.

### *3.2.2. The independent variables*

First, we construct a time dummy variable Post. The new Securities Law was officially issued on March 1, 2020. So, from 2017 to 2019, before the amendment of the New Securities Law, Post is 0. From 2020, after the amendment of the Law, Post is 1. Secondly, according to whether the internal control index of the samples is 0 three years before the new law is issued, this paper judges whether the company has major defects in internal control, and then divides the samples into the high-risk group, namely the experimental group, and the low-risk group, namely the control group (Xuesong Qian, Sheng Fang, 2021)[29]. Finally, this paper selects other variables that may affect earnings management as control variables (Xiaofang Xu, 2021) [33]. The specific definitions of variables are shown in Table 1.

*Table 1: Variable definitions*

| Variable | Definition |
|---|---|
| DA | According to the earnings management degree calculated by the revised Jones model, and take the absolute value. The greater the absolute value, the greater the earnings management degree of the enterprise. |
| Post | From 2017 to 2019, Post is 0; from 2020, Post is 1. |
| treat | For listed companies with major defects in internal control during 2017-20193, it is a high-risk sample. Setting it as the experimental group, treat is1, and the remaining conditions are 0. |
| Lev | Total liabilities/Total assets |
| ROA | Net profit/average balance of total assets |
| Size | The natural log of total assets |
| Growth | (Current year main business income - last year main business income) /Last year main business income |
| State | If the listed company is a state-owned enterprise, it is 1; otherwise, it is 0. |
| Idd | Proportion of the number of independent directors to the number of board members. |
| Top1 | Number of shares held by the largest shareholder/total number of shares. |
| Big4 | The value is 1 if the company employs the international Big Four accounting firms to audit, otherwise it is 0. |
| Dual | If concurrent, the value is 1; otherwise, it is 0. |
| MB | Total assets/total market capitalization |
| Inst | Take the sum of the shareholding proportions of institutional investors of eight categories (fund, qualified foreign investor, securities broker, insurance, social security fund, trust, financial company and bank) (Feng Cao,2015) [12] |
| ACA-DM | If there is at least one scholar-type independent director among the independent directors of the listed company, the value is 1; otherwise, the value is 0. |
| AA | The natural log of the number of analysts who follow a company. |

### *3.3. Model*

In this paper, the impact of the new law on earnings management is empirically tested by building a difference-in-difference model. In this paper, year and industry fixed effects are both controlled, and two-dimensional clustering is performed at the company and annual levels. The specific model is as follows:

$$\begin{aligned} \mathrm{DA}_{i,t} = {} & \beta_0 + \beta_1 \cdot \mathrm{Treat}_{i,t} + \beta_2 \cdot \mathrm{Post}_{i,t} \times \mathrm{treat}_{i,t} + \beta_3 \cdot \mathrm{Lev}_{i,t} + \beta_4 \cdot \mathrm{ROA}_{i,t} + \beta_5 \cdot \mathrm{Size}_{i,t} \\ & + \beta_6 \cdot \mathrm{Growth}_{i,t} + \beta_7 \cdot \mathrm{State}_{i,t} + \beta_8 \cdot \mathrm{Idd}_{i,t} + \beta_9 \cdot \mathrm{Top1}_{i,t} + \beta_{10} \cdot \mathrm{Big4}_{i,t} \quad (2) \\ & + \beta_{11} \cdot \mathrm{Dual}_{i,t} + \beta_{12} \cdot \mathrm{MB}_{i,t} + \beta_{13} \mathrm{Inst}_{i,t} + \sum \mathrm{Industry} + \sum \mathrm{Year} + \varepsilon_{i,t} \end{aligned}$$

Post×treat is the key variable in the model. This paper focuses on the coefficient β2, which is the net effect of the issuance of the new Securities Law on the accrued earnings management level of companies with major internal control defects. According to the hypothesis H1, the coefficient of Post×treat should be significantly negative.

## 4. Empirical results

### *4.1. Descriptive statistics*

Table 2 shows the descriptive statistical results. The mean value of accrued earnings management (DA) is 0.061 and the standard deviation is 0.062, which is close to the mean value. It shows that the degree of accrued earnings management varies greatly among different listed companies in China, and it is of great practical significance to analyze the impact of the new Securities Law on accrued earnings management. The mean value of treat is 0.059, indicating that about 6% of the companies in the sample are high-risk companies. Finally, the statistical results of control variables such as company Size (Size),

ISSN 2616-5902 Vol. 4, Issue 8: 69-80, DOI: 10.25236/AJBM.2022.040811

asset-liability ratio (Lev) and etc are similar to previous studies.

*Table 2: Descriptive statistical*

| Variable | N | Mean | SD | Mix | Q1 | Median | Q3 | Max |
|---|---|---|---|---|---|---|---|---|
| DA | 11528 | 0.061 | 0.062 | 0.001 | 0.020 | 0.042 | 0.080 | 0.334 |
| treat | 11528 | 0.059 | 0.236 | 0 | 0 | 0 | 0 | 1 |
| Post | 11528 | 0.271 | 0.445 | 0 | 0 | 0 | 1 | 1 |
| Lev | 11528 | 0.421 | 0.195 | 0.066 | 0.267 | 0.415 | 0.561 | 0.876 |
| ROA | 11528 | 0.039 | 0.069 | -0.278 | 0.015 | 0.039 | 0.072 | 0.219 |
| Size | 11528 | 22.36 | 1.292 | 20.08 | 21.43 | 22.19 | 23.10 | 26.33 |
| Growth | 11528 | 0.225 | 1.943 | -2.733 | -0.021 | 0.100 | 0.252 | 102.6 |
| State | 11528 | 0.325 | 0.468 | 0 | 0 | 0 | 1 | 1 |
| Idd | 11528 | 0.377 | 0.053 | 0.333 | 0.333 | 0.364 | 0.429 | 0.571 |
| Top1 | 11528 | 0.338 | 0.143 | 0.092 | 0.227 | 0.315 | 0.431 | 0.729 |
| Big4 | 11528 | 0.059 | 0.236 | 0 | 0 | 0 | 0 | 1 |
| Dual | 11528 | 0.297 | 0.457 | 0 | 0 | 0 | 1 | 1 |
| MB | 11528 | 0.665 | 0.251 | 0.132 | 0.480 | 0.664 | 0.851 | 1.211 |
| Inst | 11528 | 0.051 | 0.060 | 0 | 0.005 | 0.028 | 0.075 | 0.267 |
| ACA_DM | 11528 | 0.910 | 0.286 | 0 | 1 | 1 | 1 | 1 |
| AA | 11528 | 1.307 | 1.245 | 0 | 0 | 1.099 | 2.303 | 4.331 |

### *4.2. Regression analysis*

#### *4.2.1. Main result*

*Table 3: Main regression results*

| Variable | DA | DA |
|---|---|---|
| treat | 0.0272*** | 0.0107*** |
| | (6.9156) | (3.6060) |
| Post×treat | -0.0147*** | -0.0110*** |
| | (-3.8212) | (-5.3819) |
| Lev | | 0.0119** |
| | | (2.1191) |
| ROA | | -0.2715*** |
| | | (-4.0053) |
| Size | | 0.0004 |
| | | (0.3891) |
| Growth | | 0.0019*** |
| | | (3.7424) |
| State | | -0.0072*** |
| | | (-9.3055) |
| Idd | | 0.0130** |
| | | (2.0409) |
| Top1 | | 0.0004 |
| | | (0.0831) |
| Big4 | | -0.0037 |
| | | (-1.3125) |
| Dual | | -0.0014 |
| | | (-1.1835) |
| MB | | -0.0478*** |
| | | (-8.3927) |
| Inst | | -0.0058 |
| | | (-0.5206) |
| Constant | 0.0594*** | 0.0805*** |
| | (8.4260) | (5.3556) |
| Year | Yes | Yes |
| Industry | Yes | Yes |
| N | 11,528 | 11,528 |
| Adjusted-$R^2$ | 0.0344 | 0.138 |

Table 3 reports the OLS basic regression results of the introduction of the New Securities Law and accrued earnings management. The coefficients of Post×treat in both columns were significant negative at 1% level. Consistent with hypothesis H1, it shows that after the implementation of the New Securities Law, the market has strengthened the supervision intensity of high-risk listed companies, tjus the earnings

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management level of companies with major defects in internal control will decrease more than those companies without major defects in internal control.

#### 4.2.2. Academic independent director

In recent year, academic independent directors have aroused the enthusiasm of listed companies. In this part, we will further explore whether the existence of academic independent directors has a moderating effect on the policy effect of the new law. Divided the sample into two groups: the group with at least one academic independent director and the group without academic independent director. Regression is performed on Equation (2) respectively. The results are shown in Table 4. In the sample with at least one academic independent director, the coefficient of Post×treat is significantly negative at the 1% level. The regression coefficient of Post×treat was not significant in the samples without academic independent directors. The results show that academic independent director have synergistic effect. The conclusion verifies hypothesis H2.

*Table 4: Academic independent directors*

| Variable | At least one academic independent director (ACA-DM=1) | No academic independent director (ACA-DM=0) |
|---|---|---|
| | DA | DA |
| treat | 0.0112*** | 0.0073 |
| | (2.8012) | (0.7575) |
| Post×treat | -0.0120*** | -0.0028 |
| | (-4.9204) | (-0.2855) |
| Lev | 0.0132** | 0.0018 |
| | (2.0279) | (0.1556) |
| ROA | -0.2649*** | -0.3256*** |
| | (-4.0127) | (-4.1475) |
| Size | 0.0001 | 0.0026 |
| | (0.1148) | (0.8382) |
| Growth | 0.0023*** | 0.0014 |
| | (3.6329) | (0.8131) |
| State | -0.0073*** | -0.0041 |
| | (-9.5111) | (-1.0091) |
| Idd | 0.0125* | 0.0266 |
| | (1.8489) | (0.8438) |
| Top1 | 0.0017 | -0.0102 |
| | (0.2716) | (-0.4931) |
| Big4 | -0.0037 | -0.0068 |
| | (-1.3405) | (-0.6826) |
| Dual | -0.0013 | -0.0026 |
| | (-1.2888) | (-0.4148) |
| MB | -0.0466*** | -0.0598*** |
| | (-9.1419) | (-4.7807) |
| Inst | -0.0070 | 0.0073 |
| | (-0.6015) | (0.1881) |
| Constant | 0.0846*** | 0.0404 |
| | (6.1649) | (0.5924) |
| Year | Yes | Yes |
| Industry | Yes | Yes |
| N | 10,496 | 1,032 |
| Adjusted-$R^2$ | 0.133 | 0.182 |

#### 4.2.3. Analyst attention

The above regression results show that the introduction of the new Securities Law will strengthen the supervision of relevant regulatory authorities over listed companies, which will lead to a decline in the level of accrued earnings management of companies. This paper will further explore whether analysts' attention to listed companies will strengthen this supervision. In this paper, the samples are divided into two groups: the high analyst attention and the low analyst attention, and the regression is performed on Equation (2) respectively. The results are shown in Table 5. In the group with high analyst concern, the coefficient of Post×treat is significantly negative at the 5% level. In the control group, the coefficient of Post×treat was not significant. The results support the "supervision hypothesis" of analysts and verifies hypothesis H3.

ISSN 2616-5902 Vol. 4, Issue 8: 69-80, DOI: 10.25236/AJBM.2022.040811

*Table 5: Analyst attention*

| Variable | High analyst attention (AA>=Median) | Low analyst attention (AA<Median) |
|---|---|---|
| | DA | DA |
| treat | 0.0052 | 0.0125*** |
| | (1.1184) | (2.8206) |
| Post×treat | -0.0159** | -0.0105 |
| | (-2.0584) | (-1.4444) |
| Lev | 0.0194*** | 0.0097* |
| | (3.2355) | (1.6845) |
| ROA | -0.1237*** | -0.3940*** |
| | (-4.4984) | (-18.8776) |
| Size | -0.0007 | -0.0033** |
| | (-0.7810) | (-2.3446) |
| Growth | 0.0016 | 0.0023*** |
| | (1.3062) | (2.6200) |
| State | -0.0055*** | -0.0067*** |
| | (-3.0753) | (-3.4451) |
| Idd | 0.0208 | 0.0036 |
| | (1.4599) | (0.2300) |
| Top1 | -0.0022 | -0.0004 |
| | (-0.3968) | (-0.0660) |
| Big4 | -0.0036 | -0.0023 |
| | (-1.4916) | (-0.4923) |
| Dual | -0.0010 | -0.0024 |
| | (-0.5529) | (-1.3044) |
| MB | -0.0373*** | -0.0320*** |
| | (-8.4832) | (-6.0327) |
| Inst | -0.0283** | -0.0359* |
| | (-2.2013) | (-1.6651) |
| Constant | 0.0903*** | 0.1519*** |
| | (4.5256) | (5.1449) |
| Year | Yes | Yes |
| Industry | Yes | Yes |
| N | 6,163 | 5,365 |
| Adjusted-$R^2$ | 0.0574 | 0.242 |

## 5. Robustness test

### *5.1. Parallel trend hypothesis testing*

Parallel trend hypothesis is one of the most important premises for using the difference-in-difference model. In order to further test the change of earnings management of listed companies is due to the policy effect caused by the issuance of the new Securities Law, rather than the time effect. This paper refers to Sun Xuejiao et al. (2021) [30], joining the cross term of dummy variable and treat in 2017 and 2018, three years before the introduction of the new Securities Law in the type (2). In order to avoid multicollinearity problems, this paper didn't include the cross-product term of 2019 into the regression. If the coefficient of the cross-product term is not significant before the issuance of the New Securities Law, it indicates that parallel trends exist. Column (1) in Table 6 is the test result.It shows that the coefficients of treat_year_before3 and treat_year_before2 are not significant, which indicating that there is no difference between the accrued earnings management level of listed companies in the experimental group and the control group before the new Law.

### *5.2. Placebo test*

In this paper, we use difference-indifference model tested the new "securities law" introduced corresponding to gauge the effect of the policy of earnings management. But the conclusion of this paper has a potential threat, the decline in accrued earnings management of listed companies may be caused by other factors that cannot be measured or controlled, rather than policies. Therefore, in order to prove the robustness of the conclusions, we change the time point of policy occurrence to further test to observe whether the policy effect of the new law on inhibiting earnings management still exists. In this paper, 2018 and 2019 are taken as the virtual time of the introduction of the new Securities Law, multiply it with treat and add it to model (2). If the coefficient of Post×treat is significantly negative. It indicates that the conclusion is caused by the original non-observable difference between the experimental group and the control group. Columns (2) and (3) in Table 6 are regression results. The results proves that it is reasonable to choose 2020 as the time point of policy introduction in this paper, and the foregoing research conclusions are robust.

### *5.3. PSM-DID*

To avoid sample selection bias and ease the problem of endogenous interference with the empirical results, we select the control variables in Formula (2) and construct the experimental group and control group according to the matching principle of nearest proximity and 1:1 matching ratio. Then testing the matched experimental group and control group. Columns (4) and (5) in Table 6 are the results. The coefficients of Post×treat for the cross term of column (4) and column (5) were -0.0534 and -0.0421, respectively, which were significantly negative at the 5% level. The results consistent with the previous research results.

*Table 6: Robustness test*

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| Time | | 2018 as the date of the policy | 2019 as the date of the policy | | |
| Variable | DA | DA | DA | DA | DA |
| treat | 0.0108** | 0.0068 | 0.0106*** | -0.0366** | 0.0082 |
| | (2.3900) | (1.4817) | (3.3283) | (-2.2714) | (0.6684) |
| treat_year_before3 | -0.0040 | | | | |
| | (-0.6239) | | | | |
| treat_year_before2 | 0.0033 | | | | |
| | (0.5289) | | | | |
| Post×treat | -0.0111* | 0.0018 | -0.0051 | -0.0534** | -0.0421** |
| | (-1.6988) | (0.3503) | (-1.1202) | (-1.9920) | (-2.3135) |
| Lev | 0.0119*** | 0.0119*** | 0.0119*** | | -0.0139 |
| | (3.2357) | (3.2323) | (3.2202) | | (-0.8625) |
| ROA | -0.2711*** | -0.2717*** | -0.2718*** | | -0.5046*** |
| | (-29.9344) | (-30.0152) | (-30.0323) | | (-13.3432) |
| Size | 0.0004 | 0.0004 | 0.0004 | | 0.0017 |
| | (0.4963) | (0.5517) | (0.5170) | | (0.4316) |
| Growth | 0.0019*** | 0.0019*** | 0.0019*** | | 0.0137** |
| | (6.9954) | (7.0136) | (6.9983) | | (2.5815) |
| State | -0.0072*** | -0.0073*** | -0.0072*** | | -0.0127** |
| | (-5.4234) | (-5.4812) | (-5.4382) | | (-2.2248) |
| Idd | 0.0129 | 0.0131 | 0.0130 | | -0.0278 |
| | (1.2676) | (1.2851) | (1.2831) | | (-0.6022) |
| Top1 | 0.0004 | 0.0005 | 0.0005 | | 0.0145 |
| | (0.1050) | (0.1281) | (0.1190) | | (0.7907) |
| Big4 | -0.0037 | -0.0037 | -0.0037 | | 0.0021 |
| | (-1.5445) | (-1.5271) | (-1.5308) | | (0.2073) |
| Dual | -0.0014 | -0.0014 | -0.0014 | | -0.0064 |
| | (-1.1169) | (-1.1050) | (-1.1123) | | (-1.0682) |
| MB | -0.0478*** | -0.0479*** | -0.0478*** | | -0.0471*** |
| | (-15.5491) | (-15.5812) | (-15.5566) | | (-2.7048) |
| Inst | -0.0058 | -0.0061 | -0.0058 | | -0.0930* |
| | (-0.5432) | (-0.5686) | (-0.5396) | | (-1.9033) |
| Constant | 0.0809*** | 0.0801*** | 0.0803*** | 0.0984*** | 0.0606 |
| | (5.2819) | (5.2271) | (5.2420) | (4.8471) | (0.7911) |
| Year | Yes | Yes | Yes | Yes | Yes |
| Industry | Yes | Yes | Yes | Yes | Yes |
| N | 11,528 | 11,528 | 11,528 | 752 | 752 |
| Adjusted-$R^2$ | 0.138 | 0.137 | 0.138 | 0.120 | 0.430 |

## 6. Further analysis

The above research has proved that the implementation of the new Securities Law will inhibit the earnings management level of listed companies. Meanwhile the recruitment of academic independent directors and analyst attention both strengthen this policy effect. So how does the implementation of the new law affect earnings management of listed companies? This part further analyzes the influence mechanism of the new Securities Law from two perspectives: the quality of internal control and the intensity of external supervision.

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### *6.1. Internal control quality*

Earnings management is one of the common problems in China's capital market, but a perfect internal control mechanism can effectively supervise and restrain the management behavior of the company's management. Therefore, the perfect degree of the internal control mechanism is one of the important factors to affect the degree of earnings management. Flawed internal controls give manager more discretion and room to manipulate earnings. After the implementation of the new Law, on the one hand, the relevant market regulatory authorities not only have strengthened the supervision of the daily management of listed companies, but also have strengthened the accountability of companies and management individuals for violations. On the other hand, the new law emphasizes the protection of investors. In order to avoid the company becoming the object of supervision attention, the directors, supervisors and management of the company with internal control defects should further improve the internal control system of the company, improve the quality of internal control, so as to reduce the risk of violations by the company and individuals and curb the earnings management level of the company.

We replace the dependent variable with internal Control quality (Control) to test the influence of new law on internal Control quality(β1). Column (1) in table 7 (1) is the result of mechanism test of internal control quality. The coefficient of Control is 1.8602, significantly positive at the 1% level. This shows that the new law can reduce the earnings management level of listed companies by improving the quality of internal control.

### *6.2. Intensity of external supervision*

The composition of a complete corporate governance system needs to include both internal and external supervision. The new Securities Law in 2020 readjust the securities issuance process, which giving market regulators more time and energy to supervise the listed companies. The external supervision of daily earnings management of the company has been further strengthened.

*Table 7: Mechanism test*

| | (1) | (2) |
|---|---|---|
| Variable | Control | Regulation |
| treat | -3.0010*** | 0.2315*** |
| | (-22.8118) | (10.6944) |
| Post×treat | 1.8602*** | 0.1494*** |
| | (8.4241) | (3.3697) |
| Lev | -0.0649 | 0.0999*** |
| | (-1.0042) | (3.3038) |
| ROA | 2.0149*** | -1.0336*** |
| | (11.0988) | (-13.8962) |
| Size | 0.0128 | 0.0103* |
| | (1.3824) | (1.7585) |
| Growth | -0.0160 | 0.0009 |
| | (-1.2935) | (0.4046) |
| State | 0.0269 | -0.0700*** |
| | (1.4287) | (-6.4033) |
| Idd | 0.2032 | 0.1088 |
| | (1.4989) | (1.3032) |
| Top1 | 0.0132 | -0.2704*** |
| | (0.2479) | (-8.1065) |
| Big4 | 0.0361 | -0.0373* |
| | (1.2208) | (-1.8740) |
| Dual | 0.0478*** | 0.0036 |
| | (2.8610) | (0.3517) |
| MB | 0.1065** | -0.0940*** |
| | (2.4526) | (-3.7230) |
| Inst | -0.0369 | -0.1053 |
| | (-0.2534) | (-1.1934) |
| Constant | 5.9128*** | 0.1703 |
| | (27.2799) | (1.3522) |
| Year | Yes | Yes |
| Industry | Yes | Yes |
| N | 11,528 | 11,528 |
| Adjusted-$R^2$ | 0.435 | 0.0822 |

Referring to the study of Gu Pu and Zhai Shiyun (2020) [21], this paper uses the natural logarithm of the punishment times of the market regulator (including Securities Regulatory Commission, Exchange,

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Local securities regulatory bureau and other institutions) to the listed companies, and replace the dependent variable by the external Regulation intensity to test the influence of new law on external supervision intensity(γ1). Column (2) in Table 7 shows the coefficient of Regulation is 0.1494, which is significantly positive at 1% level. It indicated that after the implementation of the New Securities Law, compared with companies without major defects in internal control, The relevant departments will strengthen the supervision of companies with major defects in internal control, so as to restrain earnings management of companies.

## 7. Conclusion

On March 1, 2020, China's new Securities Law was officially implemented, which is an important step towards the marketization of China's capital market, and also a milestone year for China's securities legal construction. We find that the introduction of the new Securities Law can reduce the accrued earnings management level of companies with major defects in internal control, and the conclusion is robust. Moreover, this difference was greater when the company had academic independent directors and high analyst attention. Finally, we prove that the new law can reduce the level of accrued earnings management of listed companies by improving the quality of internal control and strengthening the intensity of external supervision.

This paper enriches the research on earnings management under the change of macro laws and policies, and has certain policy significance. On the one hand, After the promulgation of the New Securities Law, securities issuance and trading tend to be market-oriented. Relevant regulatory departments should change the original supervision focus and direction in a timely manner to avoid the decline of supervision due to institutional reform. In addition, as the internal and external governance mechanism of the company, the independent directors of analysts and scholars should give full play to their synergies. Policy and supervision should be combined to restrain the opportunistic earnings management behavior of corporate management. On the other hand, the conclusion of this paper also shows that the revision of the Securities Law fills in the weaknesses of previous policies, can effectively restrain earnings management of companies, prevent and control market risks, and promote the healthy development of the capital market.

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