

The Relationship between IFRS Adoption and Earnings Quality: Evidence from China

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Abstract

We investigate the effect of International Financial Reporting Standards (IFRS) mandatory adoption on earnings quality, and how auditor type (Big 4 vs. non-Big 4) could moderate this relationship. Standard setters argue that IFRS adoption would lead to improving the accounting information quality. Our findings suggest that IFRS adoption is associated with higher earnings quality (lower abnormal accruals). However, results do not provide evidence on the effect of the auditor type on this nexus. This study's findings are important to standard setters as they evaluate IFRS adoption.

Keywords: IFRS adoption; Earnings Quality; Audit Quality; China

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1. Introduction

Our object is to investigate the impact of adopting International Financial Reporting Standards (IFRS) on earnings quality in the Chinese context. The China Accounting Standards Committee and the International Accounting Standard Board signed a joint statement in November 2005 regarding the status of substantial convergence between Chinese accounting standards and IFRS. Convergence with IFRS is one of the primary goals of China's standard-setting program, according to the "Joint Statement of the Secretary-General of the China Accounting Standards Committee and the Chairman of the International Accounting Standard Board". The revised Accounting Standards for Business Enterprises (containing one basic standard and 38 particular standards) were issued by China's Ministry of Finance in February 2006, and they went into effect for the 2007 financial reports of listed businesses in China. Thus, Chinese listed companies are required to report their financial conditions under the Chinese Accounting Standards (CAS) which represent a convergence of IFRS beginning from the 2007 fiscal year.

Earnings quality and financial reporting quality are among the topics that have received great attention and have been debated by investors and legislators in addition to researchers. This increased concern in earnings quality is attributed to accounting scandals, manipulation of accounting numbers, that resulted in some multinational enterprises collapsing (Schipper and Vincent, 2003; Francis et al., 2006; Hermanns, 2006).

Earnings quality is influenced by two types of factors: those that reflect innate features of business models and operating environments, and those that reflect the financial reporting process per se (Francis et al., 2006). A further and likely important determinant of the quality of accounting information is the adoption of International Financial Reporting Standards (IFRS), issued by the International Accounting Standards Board (IASB).

Since the large-scale mandatory adoption of IFRS over 10 years ago, a number of research studies have evaluated the effects of IFRS adoption. The early studies understandably focus on the direct effects of IFRS on reporting quality. In contrast to the findings reported based on voluntary IFRS adopters, studies of mandatory adopters provide, at best, mixed evidence that adoption improves the quality of accounting reports.

We use a sample of listed firms on both Shanghai Stock Exchange and Shenzhen Stock Exchange during the period from 2003 to 2019. We employed abnormal accruals estimated by the modified Jones (1991) model as a reverse proxy for earnings quality. We used a dummy variable as a proxy for IFRS adoption which takes 1 if the annual report is prepared under IFRSs, i.e., 2007 fiscal year and afterward; and takes 0 otherwise.

We find a negative relationship between IFRS adoption and the number of abnormal accruals. This means that earnings quality was higher, discretionary accruals contained in earnings was lower, after preparing financial statements using International Financial Reporting Standards. However, we find no evidence on the moderating effect of auditor type (Big 4) on this nexus. That is, there is no difference between earnings quality after IFRS adoption for the companies that are audited by the big4 audit firm compared with those audited by non Big4.

This study has the following contributions and implications. First, it extends the growing literature on IFRS adoption consequences by applying on the largest emerging country: the Chinese setting. Recent research reveals mixed evidence using mostly the data from the EU and other developed countries that have adopted IFRS, whereas there is limited empirical research into the Chinese IFRS adoption. Thus, our study can enrich the research on IFRS adoption worldwide. Second, our study provides further evidence on whether the mandatory adoption of IFRS can enhance the earnings quality of Chinese listed firms. Third, this study also provides

important implications to the Chinese authorities for future IFRS-related decisions. Our results could be helpful in evaluating the effectiveness of the IFRS adoption in China.

2. Literature Review and Hypothesis Development

IFRS adoption has much attention from researchers and an extended debate during the last two decades. Moreover, the effects of IFRS adoption on accounting information quality take the most proportion of that debate, there are many empirical reviews (e.g. Soderstrom and Sun, 2007; Pope and McLeay, 2011; Brüggemann et al., 2013; Palea, 2013; Samaha and Khelif, 2016; De George et al., 2016; Houqe, 2017) have been conducted to summarize the empirical literature dealing with this stream of research.

Soderstrom & Sun (2007) notes that the quality of accounting information is generally affected by the quality of the accounting standards used, and if the IASB Council continues to improve the quality of IFRSs, financial reporting is expected to become increasingly reliable and relevant in value. Barth et al. (2008) stated that it is possible to acknowledge the high quality of accounting standards when standards developers can increase their rigor and reduce the available flexibility to the extent that it restricts opportunistic management behaviors in developing accounting estimates for earnings management.

Using a sample of Italian private (i.e., nonlisted) companies that adopt IFRS, Cameran et al. (2014) examined the effect of IFRS adoption on financial reporting quality, and find that adoption did not increase reporting quality among private companies but, conversely, decreased it. Their results reveal a deterioration in the quality of earnings reported by those private firms that switched to IFRS compared to their counterparties that did not switch to IFRS.

Ahmed et al. (2013) used a sample of firms from 20 countries that mandatorily adopted IFRS in 2005 to examine whether reporting quality developed after adopting IFRS. They compared the reporting quality of firms that adopted IFRS to firms that did not adopt IFRS. Their empirical results show that Mandatory IFRS leads to greater income smoothing, greater earnings aggressiveness, and more delayed recognition of losses in the IFRS adopters firms. In additional analyses, they argue that these findings are more pronounced in countries with relatively strong enforcement environments. In other words, the effects of IFRS adoption on accounting information quality depend on regimes and institutional factors which help in compliance with the new standards.

Zeghal et al. (2012) examined whether the mandatory adoption of International Financial Reporting Standards (IFRS) is associated with higher accounting quality. Particularly, they investigate whether adopting IFRS in 15 European Union (EU) countries has a relationship with lower earnings management and higher timeliness, conditional conservatism, and value relevance of accounting numbers. Their results reveal that there has been some improvement in accounting quality between the pre-and post-IFRS adoption periods.

In a specific-country study, Lin et al. (2012) aimed to assess accounting quality after IFRS adoption in the US context, and they find it deteriorated after the transition. Their results show that IFRS adoption exhibits more earnings management, less timely loss recognition, and less value relevance.

International Accounting Standard Board claims that it is intended more transparency and more reporting quality from implementing the new standards, IFRS. Studies of mandatory adopters provide, at best, mixed evidence that adoption improves the quality of accounting reports. So, we can point out the first hypothesis on this form:

H1: there is a positive relationship between IFRS adoption and Earnings quality.

Ebrahim (2014) argues that the independent audit process is an essential monitoring and enforcement mechanism for the enacted financial reporting standards in any jurisdiction. The independent audit process adds reasonable assurance that the financial reporting process is consistent with enacted professional standards and that the financial information provided is free from significant misstatements. The monitoring mechanism exercised through the independent audit process is expected to be more efficient with the increase in the perceived quality of the audit services provided by independent auditors with recognized “brand names” in the audit industry (DeAngelo, 1981). Recent research that reemphasized the effect of audit quality on financial reporting and enforcement of accounting regulations include Francis and Yu (2009) and Lennox and Pittman (2010).

In a theoretical framework, Choi et al (2004) show that independent audit quality serves as an enforcement mechanism that assures the accounting information credibility in those countries where the legal environment seems to be weak. Auditors play a stronger governance role in a weak legal environment by providing higher quality audits to substitute for the lack of governance resulting from a weak legal environment (Ebrahim, 2014). Choi and Wong (2007) found some support for these claims. The empirical results of Fan and Wong (2005) suggest that the independent audit process plays a significant corporate governance role in a concentrated or family ownership environment.

According to prior studies, audit services provided by Big 4 audit firms are of greater quality than audit services provided by non-Big N audit firms. Hence, our second hypothesis tests the role of audit quality on the

relationship between IFRS adoption and earnings quality as this form:

H2: mandatory IFRS adoption increases earnings quality more for Big 4 clients relative to non-Big 4 clients.

3. Method

3.1. Sample and Data Collection

The study sample is represented in all companies listed on Shanghai Stock Exchange and Shenzhen Stock Exchange that are obligated to prepare financial statements according to the Chinese Accounting Standards during the period from 2003 to 2019. The Chinese Ministry of Finance released the last version of CAS in 2006 which represents the most convergence set with IFRS, requested listed companies to comply with it from the fiscal year beginning in January 2007. So, our study period includes two fiscal years Pre- and Post-Adoption of IFRS.

According to what is going on in most of the previous studies, the researchers excluded the financial firms from the final sample of the study, because these companies are subject to laws different from other companies besides the different characteristics of the operating environment surrounding those companies. We also excluded any observations with missed data necessary to operate model (2). Hence, our final sample includes 33,411 firm-year observations for 3,586 listed nonfinancial firms. We get the data used in this research from The China Securities Markets and Accounting Research database (CSMAR).

3.2. Earnings Quality Measurement

The dependent variable, earnings quality, could be measured using many proxies, but Accruals is the most appropriate and commonly used indicator to capture it (Kallapur et al., 2010; Boone et al., 2012). Hence, in this study, we used the Discretionary/Abnormal Accruals (DACC) as a reverse indicator of earnings quality. The higher the abnormal accruals, the lower the earnings quality. Discretionary Accruals estimated by running, cross-sectionally by year for each industry, the modified-Jones (1991) model which modified by Dechow, Sloan, and Sweeney (1995). The residuals of this model represent the discretionary accruals (Cross-Sectional Regression). Specifically, we used the following model:

$$TACC_{it}/TA_{it-1} = \beta_0 + \beta_1(1/TA_{it-1}) + \beta_2(\Delta Rev_{it} - \Delta Rec_{it}/TA_{it-1}) + \beta_3(PPE_{it}/TA_{it-1}) + \epsilon_{it} \quad (1)$$

where TACC_{it} is the total accruals for firm i in year t, TA_{it-1} is total assets for firm i in year t-1, ΔRev_{it} is measured by revenues in year t less revenues in year t-1 for firm i, ΔRec_{it} is measured by receivables in year t less receivables in year t-1 for firm i, PPE_{it} is the gross property, plant, and equipment for firm i in year t, and ε_{it} is the error term firm i in year t.

3.3. Model Specification

We specify an appropriate model to test the hypotheses of the current study based on the literature and according to the data availability in the Chinese environment. It has been running using all available data during the study period fully assembled in one data set (Pooled Regression).

$$\begin{aligned} M_Jones_{it} = & \beta_0 + \beta_1 IFRS_{it} + \beta_2 SIZE_{it} + \beta_3 CFO_{it} + \beta_4 ROA_{it} + \beta_5 GROWTH_{it} \\ & + \beta_6 LEVERAGE_{it} + \beta_7 CURRENT_{it} + \beta_8 MAO_{it} + \beta_9 LOSS_{it} \\ & + \beta_{10} BIG4_{it} + \beta_{11} AF_{it} + Industry + \epsilon_{it} \end{aligned} \quad (2)$$

$$\begin{aligned} M_Jones_{it} = & \beta_0 + \beta_1 IFRS_{it} + \beta_2 IFRS \times BIG4_{it} + \beta_3 SIZE_{it} + \beta_4 CFO_{it} + \beta_5 ROA_{it} \\ & + \beta_6 GROWTH_{it} + \beta_7 LEVERAGE_{it} + \beta_8 CURRENT_{it} + \beta_9 MAO_{it} \\ & + \beta_{10} LOSS_{it} + \beta_{11} BIG4_{it} + \beta_{12} AF_{it} + Industry + \epsilon_{it} \end{aligned} \quad (3)$$

The variable description and measurement are summarized in Appendix 1.

We test our first hypothesis by looking at the sign and the significance of β₁ in Model (2). We test our second hypothesis by looking at the sign and the significance of β₂ in Model (3). Our independent variable, IFRS adoption, is measured by a dummy variable (IFRS) which equals 1 if the firm prepared its financial statements under IFRSs, i.e., for the fiscal years 2007 and years later, and 0 otherwise. The second variable of interest is (IFRS*BIG4) which captures the interaction effect of IFRS adoption and audit quality (measured by auditor type) on earnings quality, so we could fix the effect of audit quality on the relationship between IFRS adoption and earnings quality as stated in H2.

Further, our model included a number of control variables that might have an impact on earnings quality. These variables have been included following literature on earnings quality and are likely to affect *Discretionary Accruals*.

4. Results

4.1. Descriptive Statistics

Table (1) presents descriptive statistics of the variables included in the hypotheses testing model. For the M_Jones variable (discretionary accruals) which is used as an inverse measure of earnings quality, the value of the mean is 0.001 and is roughly equal to those of Reynolds and Francis (2001) which was 0.0872, Myers et al. (2003) which reached 0.0812, and Boone et al. (2012) which amounted to 0.0607, as is the case for its counterparts disclosed in other earlier studies (e.g. Becker et al., 1998; Choi et al., 2010; Kallapur et al., 2010).

Table 1. Descriptive statistics of Variables included in Model (1)

Variable	N	Mean	P1	Q1	Median	Q3	P99	SD
M_Jones	33411	0.001	-0.337	-0.041	-0.000	0.042	0.32	0.155
IFRS	33411	0.866	0	1	1	1	1	0.341
SIZE	33411	21.941	19.133	21.024	21.793	22.684	25.874	1.339
CFO	33411	0.03	-0.247	0.005	0.049	0.099	0.354	4.431
ROA	33411	0.029	-0.318	0.011	0.033	0.062	0.191	0.083
GROWTH	33411	0.209	-0.629	-0.022	0.115	0.286	3.004	0.622
LEVERAGE	33411	0.523	0.056	0.293	0.457	0.617	1.162	4.911
CURRENT	33411	2.264	0.202	1.014	1.472	2.33	14.787	3.654
MAO	33411	0.056	0	0	0	0	1	0.229
LOSS	33411	0.115	0	0	0	0	1	0.319
BIG4	33411	0.056	0	0	0	0	1	0.229
AF	33411	13.611	12.206	13.122	13.528	13.998	16.133	0.758

The previous presentation shows that the characteristics of the dependent variable and the independent variables of interest are closed to those of other relevant studies, and then it can be said that the results that will be reached will be comparable with the results of studies similar to the current study.

Table (2) shows Pearson's correlation matrix among the variables included in the hypothesis test Model (2), which shows the initial correlation between these variables.

Table 2: Pearson's correlation matrix among the variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) M_Jones	1.00											
(2) IFRS	0.00	1.00										
(3) SIZE	0.03	0.20	1.00									
(4) CFO	-0.01	0.00	0.00	1.00								
(5) ROA	0.30	0.10	0.10	0.00	1.00							
(6) GROWTH	0.03	-0.01	0.04	-0.03	0.17	1.00						
(7) LEVERAGE	-0.04	-0.02	-0.05	0.00	-0.07	-0.01	1.00					
(8) CURRENT	0.03	0.08	-0.17	0.00	0.12	-0.03	-0.03	1.00				
(9) MAO	-0.11	-0.08	-0.18	0.00	-0.40	-0.07	0.06	-0.07	1.00			
(10) LOSS	-0.19	-0.04	-0.13	0.00	-0.65	-0.15	0.04	-0.08	0.35	1.00		
(11) BIG4	0.00	0.00	0.33	0.00	0.06	-0.01	0.00	-0.05	-0.04	-0.04	1.00	
(12) AF	0.00	0.27	0.76	0.00	0.02	0.00	0.00	-0.13	-0.05	-0.03	0.43	1.00

Number in bold indicates that the correlation coefficient is significant at lower than 5% or 1% level.

From the previous table, it appears that the largest correlation coefficient in the matrix was between the two variables AF and SIZE and its value was 0.76, which means an intermediate correlation strength between them, which means that large-sized companies paid higher audit fees. Multicollinearity is unlikely to be a problem in our research because the maximum correlation coefficient is still less than 0.8 and the Variance Inflation Factor (VIF) values provided in Table (3) are less than 10.

4.2. Hypotheses Test Multivariate Results

Table (3) presents the results of running the hypothesis test Model (2). We run the regression model by estimating robust standard errors clustered by firms instead of estimating the traditional standard errors estimated according to the OLS method.

The coefficient of the IFRS variable carries a negative signal and is statistically significant at the level of 1% which indicates a direct negative relationship between it and the dependent variable in the model (discretionary accruals). This means that earnings reported under IFRS adoption include lower amounts of abnormal accruals. Hence, IFRS adoption results in higher earnings quality. Thus, this result confirms our first hypothesis.

The results of testing Hypothesis 2, running Model (3), are reported in Table (4). The coefficient of the variable IFRS×BIG4 carries a negative signal but is not statistically significant, indicating that there is no interaction effect of both IFRS adoption and auditor type on earnings quality. That is, audit quality does not moderate the relationship between IFRS adoption and earnings quality, suggesting that there are no distinctions between the effect of IFRS on earnings quality for big 4 clients and non-big 4 clients. Hence, we reject the

second hypothesis.

In addition to the independent variables of interest, it is clear from table (3) that two variables of control variables included in the model are significant: *Return on assets (ROA)*, where its coefficient carried a positive signal; and *BIG4*, its coefficient carried a negative signal as it is expected.

Table 3: Hypothesis 1 test results.

The relationship between IFRS adoption and Earnings Quality.

	(1)	(2)
	M_Jones	VIF
IFRS	-0.014*** (-6.39)	1.13
SIZE	0.001 (0.60)	2.51
CFO	-0.000 (-0.89)	1.00
ROA	0.585*** (15.43)	1.87
GROWTH	-0.008 (-1.28)	1.04
LEVERAGE	-0.001 (-1.52)	1.01
CURRENT	-0.000 (-0.60)	1.07
MAO	0.004 (0.45)	1.25
LOSS	0.002 (0.55)	1.76
BIG4	-0.014*** (-3.93)	1.26
AF	-0.000 (-0.16)	2.74
Constant	-0.022 (-1.12)	
Industry	Included	
<i>N</i>	33,411	
<i>R</i> ²	0.09	
<i>F-value</i>	136.49	
<i>Prob F</i>	0.000	

t statistics are presented in parentheses;

*, **, *** denotes statistical significance at the level of 10%, 5%, 1%, respectively;

The t-statistics presented in the regression model are based on the standard errors clustered on the client firm level.

**Table 4: Hypothesis 2 test results.
 The effect of auditor type on the relationship between IFRS adoption and Earnings Quality.**

	(1)
	M_Jones
IFRS	-0.014***
	(-6.17)
IFRS×BIG4	-0.003
	(-0.43)
SIZE	0.001
	(0.61)
CFO	-0.000
	(-0.89)
ROA	0.585***
	(15.42)
GROWTH	-0.008
	(-1.28)
LEVERAGE	-0.001
	(-1.52)
CURRENT	-0.000
	(-0.60)
MAO	0.004
	(0.45)
LOSS	0.002
	(0.55)
BIG4	-0.011
	(-1.51)
AF	-0.000
	(-0.17)
Constant	-0.022
	(-1.14)
Industry	Included
<i>N</i>	33,411
<i>R</i> ²	0.09
<i>F-value</i>	125.20
<i>Prob F</i>	0.000

t statistics are presented in parentheses;

*, **, *** denotes statistical significance at the level of 10%, 5%, 1%, respectively;

The t-statistics presented in the regression model are based on the standard errors clustered on the client firm level.

4.3. Sensitivity Analysis

We re-test the relationship between IFRS adoption and abnormal accruals (earnings quality), and the moderating effect of auditor type on this relationship, using alternative estimation for our dependent variable: abnormal accruals. In this section, we estimated abnormal accruals using the primary Jones (1991) Model, which take the following form:

$$TACC_{it}/TA_{it-1} = \beta_0 + \beta_1(1/TA_{it-1}) + \beta_2(\Delta Rev_{it}/TA_{it-1}) + \beta_3(PPE_{it}/TA_{it-1}) + \varepsilon_{it} \quad (4)$$

We used the residuals of this model as our dependent variable. Table (5) displays the results of hypotheses tests according to this sensitivity test. However, our main findings remain the same.

Table 5: Sensitivity analysis.

	(1)	(2)
	Jones	Jones
IFRS	-0.013***	-0.013***
	(-5.95)	(-5.72)
IFRS×BIG4		-0.003
		(-0.49)
SIZE	-0.000	-0.000
	(-0.11)	(-0.10)
CFO	-0.000	-0.000
	(-0.94)	(-0.94)
ROA	0.578***	0.578***
	(15.45)	(15.43)
GROWTH	-0.015**	-0.015**
	(-2.43)	(-2.43)
LEVERAGE	-0.001	-0.001
	(-1.60)	(-1.60)
CURRENT	-0.000	-0.000
	(-0.36)	(-0.37)
MAO	0.006	0.006
	(0.61)	(0.61)
LOSS	0.003	0.003
	(0.89)	(0.88)
BIG4	-0.014***	-0.011
	(-3.87)	(-1.44)
AF	0.000	0.000
	(0.14)	(0.14)
Constant	-0.022	-0.003
	(-1.14)	(-0.15)
Industry	Included	Included
<i>N</i>	33,411	33,411
<i>R</i> ²	0.09	0.09
<i>F-value</i>	127.99	117.48
<i>Prob F</i>	0.000	0.000

t statistics are presented in parentheses;

***, **, *** denotes statistical significance at the level of 10%, 5%, 1%, respectively;**

The t-statistics presented in the regression model are based on the standard errors clustered on the client firm level.

5. Conclusions

Accounting standards are the organizer of the financial reporting process and the first guide for accountants in handling financial transactions. The primary goal of developing accounting standards is to ensure that accounting information is presented to its users with high quality to achieve the public benefit from it. Generally Accepted Accounting Principles provide alternative methods and different policies to solve problems that corporate departments may face when processing accounting data, but the flexibility that these standards have given to management to choose between as well as the flexibility available to them in setting some provisions and estimates has become a haven for opportunistic behavior by management to manipulate profits in order to achieve personal benefits.

The aim of this study is to examine the impact of IFRS adoption on earnings quality of Chinese listed companies. Using a sample of 33,411 firm-year observations for 3,586 non-financial listed firms spanning the period 2003-2019, we run regression analyses to compare those firms' earnings quality between the pre-and post-IFRS periods.

We find a positive (negative) relationship between IFRS adoption and earnings quality (abnormal accruals). This means that earnings quality was higher, discretionary accruals contained in earnings were lower, after preparing financial statements under IFRSs. However, the study did not find a moderating effect for auditor type (big vs. non-big) on this relationship. That is, earnings quality increased after IFRS adoption disregarding that companies are audited by the big4 audit firms or audited by non Big4.

This study enriches literature with evidence on whether the mandatory adoption of IFRS impacted the

earnings quality of Chinese listed firms. Our findings might provide implications to accounting information users and the standard setters. It is still unclear whether the IFRS adoption has improved earnings quality and can benefit accounting information users in this respect. Our findings may also help the standard setters in evaluating adopting IFRS by Chinese listed firms. Therefore, our findings could serve as a piece of timely evidence for evaluating the IFRS adoption in the Chinese setting.

The results of this study are subject to a couple of limitations. First, despite we have controlled for several earnings' quality determinants, it is admitted that there may be other determinants to manage earnings that have not been controlled for. Second, we only consider one aspect of earnings quality: the level of earnings management (number of discretionary accruals). Further research could benefit from examining the relationship between IFRS adoption and other aspects of earnings quality, such as timeliness, earnings conservatism, and value relevance. In addition, further research effort is warranted to distinguish between high and low transparency adopters of IFRS. Moreover, future research may examine other institutional factors rather than audit quality on the relation between IFRS adoption and earnings quality.

Appendix 1: Variables Definitions

Variable	Definition
Δ REC	= change in accounts receivables.
Δ REV	= change in sales revenue.
AF	= Natural logarithm of total audit fees
BIG4	Dummy variable equals 1 if the client uses a Big 4 auditor; = 0 otherwise.
CFO	= Cash Flow from operations scaled by lagged total assets.
CURRENT	= Total current assets/total current liabilities.
GROWTH	company's one-year growth in sales from year t-1 to year t
IFRS	Dummy variable equals 1 if the firm prepared its financial statements under IFRSs, i.e., for the fiscal years 2007 and 2019, and 0 otherwise.
IFRS×BIG4	Interaction variable, which captures the interaction effect of IFRS adoption and audit quality (measured by auditor type) on earnings quality.
LEVERAGE	= the company's total liabilities scaled by total assets in year t
LOSS	Dummy variable equals 1 if a company's net income is below zero in year t, and 0 otherwise.
MAO	Dummy variable equals 1 if the firm received a qualified audit opinion in the current year, and 0 otherwise.
M_Jones	Discretionary/Abnormal Accruals= residuals from Model 1.
PPE	= gross property, plant, and equipment (fixed assets)
ROA	= Net profit/total assets.
SIZE	= Natural logarithm of total assets for year t
TA	= Total assets for the last year (t-1).
TACC	Total accruals = net income before extraordinary items less cash flows from operations.

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