

The Effect of the Corporate Governance Evaluation Mechanism on Earnings Management

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Abstract

This study aims to test the effectiveness of the corporate governance evaluation mechanism (CGEM) in Taiwan, and whether firms value this mechanism then self-limit earnings management. In this paper, we use full announced ranking results and develop an analytical model that examines the effect of the ranking level on earnings management. We find that ranking levels are negatively and significantly associated with the extent of earnings management. However, we fail to detect a significant effect of the subsequent changes of rankings on the changes of the extent of earnings management. In addition, we explore family firms in Taiwan are fully engaged in this mechanism than non-family firms, which implies family firms are more reputational concerns. Our findings illustrate how the CGEM in Taiwan serves a certain effect on limiting earnings management through public pressure.

Keywords: Corporate Governance, Earnings Management; Family Firms

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1. Introduction

Introducing an effective corporate governance evaluation mechanism (hereafter CGEM) can mitigate information asymmetry, promote healthy competition between firms, and inspire firms to establish better corporate governance. With the global trend of strengthening corporate governance for investor protection, several credible international organizations have conducted worldwide firm-level corporate governance investigations. To cultivate corporate governance culture with international standards and design a mechanism suitable for the local environment, the Financial Supervisory Commission (hereafter FSC), a regulatory agency responsible for the enterprises in Taiwan, initiated the CGEM in 2014. The FSC announces the ranking result after evaluation on an annual basis. However, it is an important issue whether this mechanism is a mere superficial formality, which doesn't serve any material function.

Shiue *et al.* (2017) propose an investigation on publicly listed companies in Taiwan between 2013 and 2014 to study the effect of this mechanism, and the result shows that the earnings quality of firms was improved after the implementation of this mechanism. Yet, Shiue *et al.*'s (2017) work only documents that firms limit earnings management for the initiation of this new mechanism. More importantly, whether firms drive themselves to conduct substantial corporate governance for the ranking exercise remains unknown. For this reason, we examine the efficacy of Taiwan's CGEM.

We explore the query of whether firms pay attention to this mechanism then self-limit earnings management. This mechanism aims to assist investors in better understanding the corporate governance performance of evaluated firms. According to signaling theory, a firm's value was estimated depending on the information that managers or other trusted insiders release (Han and Suk, 1998). Specifically, the ranking result would be a note for investors and affects the evaluated firm's value (Tai and Hwang, 2020; Tai, 2020). In consequence, managers may consider the loss from infamous for low ranking and therefore enhance corporate governance to conform to the standards of the CGEM in Taiwan.

In accordance with the evaluation criteria released by the FSC, the evaluation indicators are basically categorized into four mainstream corporate governance mechanisms—external and internal governance, information transparency, and corporate social responsibility, and every aspect has been supported by numerous and formidable researches (Huang *et al.*, 2019). Due to the evaluations of this mechanism scrutinize corporate governance by these aspects, firms that follow this mechanism to strengthen corporate governance can forcefully alleviate the agency problem. Thus, we argue that the higher ranking of the CGEM in Taiwan denotes lower earnings management.

Furthermore, the benefit (loss) that a firm advances (regress) the ranking may become an alluring incentive to self-limit earnings management. Tai and Hwang (2020) indicate the market positively responds to firms with progressing in ranking, vice versa, Tai (2020) finds that firms

usually experience price discount after the regress of the ranking. In specific, firms raise the ranking in the CGEM, which means managers put more effort into improving corporate governance than before. For this reason, compared to the preceding year, we anticipate firms with progress in the ranking result have lower earnings management.

Moreover, an extension of our question addresses whether family firms attach greater importance to the ranking result than non-family firms. According to an investigation of the Chinese capital market in 2020 released by the Taiwan Institute of Director, family firms in Taiwan occupy 70% of listed companies, and they contribute 55% capital market, which is higher than Hong Kong and China. Prior literature suggests that family businesses in Western value reputation (Zellweger *et al.*, 2013). On the contrary, in Chinese society and culture, family businesses have always been criticized as controversies that family interests outweigh corporate governance, opaque financial information, and the fact of succession that the majority of family businesses are only passed to the children but a few to someone competent (Fan and Wang, 2002). Of the three largest Chinese economic systems, Taiwan is the highest proportion of family businesses. On this account, the issue of how Taiwanese CGEM influences family firms, limiting earnings management, remains critical.

The presence of agency conflict in the family firm is major between dominant and minority shareholders. Since family firms are highly concentrated ownership, plus the family name is tied to the firm, family members tend to avoid that minority shareholders being pessimistic about their integrity. They might manage firms' reputations in case suffering minority shareholders' penalization, such as discounting the stock price. Hence, we infer that family firms will take a more proactive attitude than non-family firms towards improving governance to get a better ranking result.

To address our hypotheses, we utilize the 3rd and 4th round ranking results, which were announced with the full ranked firms' names. Based on the class interval announced by the FSC, the ranking result are divided into seven grades. Besides, we adopt two measures of abnormal accruals, the modified Jones model with ROA (Kothari *et al.*, 2005) and modified Jones model (Dechow *et al.*, 1995), as the proxies of earnings management. Using 2,958 firm-year observations from Taiwanese CGEM firms in 2016 (3rd round) and 2017 (4th round), we show that the ranking result is negatively and significantly associated with the absolute of abnormal discretionary accruals. In other words, *ceteris paribus*, increasing in the ranking level reduces the extent of earnings management. This finding explains the efficacy of Taiwanese CGEM. However, we didn't find the relationship between the change of ranking levels and the change of earnings management in magnitude. In addition, we find that family firms in Taiwan are fully engaged in this mechanism than non-family firms. This result is consistent with the argument that family owners are more concerned with the potential damage to the family reputation.

This study objects to test the effectiveness of the CGEM in Taiwan and whether firms value this mechanism then self-limit earnings management. Unlike Shiue *et al.*'s work mainly focuses on the effect of the initiation of Taiwanese CGEM, we concentrate on the constant causal effect of this mechanism. This study complements prior research by providing evidence that the CGEM in Taiwan influences firms to mitigate their earnings management. We also provide significant evidence supporting the theory that family firms value their reputation more than non-family firms. It is a note that we suggest a way to mitigate managers' earnings management behaviors through public comments. Nonetheless, the ranking result is announced with class intervals, which means we cannot observe the variation of the firms' earnings management in a same class.

In Section 2 we discuss the relationship between Taiwanese CGEM and earnings management. Section 3 contains our statistical methodology while section 4 presents our sample selection and empirical results. Finally, we present our conclusions in Section 5.

2. Background and Hypothesis Development

2.1 Corporate Governance Evaluation Mechanism

It is widely accepted that the corporate governance rating is an important reference for investors. To establish Taiwanese firms with international standards, the FSC initiated the CGEM in 2014. The FSC referring to the international mechanisms, global corporate governance trend, and the principles of corporate governance released by the Organization for Economic Co-operation and Development (OECD) in 2004, designs the evaluation indicators, which are based on five dimensions, including: (1) protecting shareholder rights, (2) treating shareholders equitably, (3) enhancing board composition and operation, (4) increasing information transparency, and (5) putting corporate social responsibility into practice. These indicators are presented in single questions, limited to "yes" or "no" answers, and the evaluated firm scores when it meets the indicator. For the process, the evaluated firm first conducts a self-assessment, then compares the self-assessment content with the evaluation result of the FSC, and the FSC will then provide explanations on major differences. In the end, the FSC will announce the ranking standards and results presented in class intervals. In 2015, only announced the first corporate governance evaluation result for the firms ranked in the top 20%, and increased to the top 50% in the next year. Since 2017 then (the 3rd round of the ranking exercise) announced the result for the firms ranked in all of the listed companies.

2.2. Hypothesis Development

The mechanism in Taiwan rigorously evaluates the corporate governance of firms and announces the results to the public, which makes investors and shareholders learn a certain state of corporate governance of a firm. In this way, the CGEM reduces information asymmetry. Based on the signaling theory, a firm's value was estimated depending on the information that

managers or other trusted insiders release (Han and Suk, 1998; Tai and Hwang, 2020). Prior studies suggest that an integrated corporate governance index is constructive for investors to reduce the cost of collecting information (Yeh *et al.*, 2002; Chen and Hu, 2007; Kao *et al.*, 2012). Explicitly, managers may worry about the impact of the loss of reputation if they didn't earn a desirable ranking of the CGEM. Indeed, prior studies have found that the market reacts to favorable and unfavorable ratings, and the management often attempts to avoid that kind of reputational loss (Johnson *et al.*, 2009; Tai and Hwang, 2020). Consequently, managers would restrain themselves and strengthen the firm-level governance mechanism to conform to standards of the CGEM (Chang and Fang, 2006; Shiue *et al.*, 2017).

The CGEM in Taiwan may limit earnings management, considering the evaluations are containing five dimensions, protecting shareholder rights, treating shareholders equitably, enhancing board composition and operation, increasing information transparency, and putting corporate social responsibility into practice, separately. Huang *et al.* (2019) indicate that these dimensions that have taken all the mainstream researches on corporate governance in its design are aiming to reduce the agency conflict between managers and shareholders.

According to the agency theory, the management manipulates earnings arising from incentives, opportunity and capability (Jensen and Meckling, 1976). Through strengthening monitoring capacity, building a shareholder-friendly environment, and constructing ethical corporate culture, well-constructed governance can constrain managers' self-interest behaviors. Herein, we discuss the studies that the external and internal governance, the extent of information transparency and corporate social responsibility, which are related to the five dimensions, affect earnings management.

First, a large body of extant literature suggests that firms to complete corporate governance mechanism can restrain the extent to which management conducts earnings manipulation (Shleifer and Vishny, 1997; Chi and Wang, 2013). One stream of corporate governance literature indicates that firms with more substantial external monitoring capacities have, such as stronger investor protection law and the higher proportion of outside independent director on the board, etc., lower earnings management (Shleifer and Wolfenzon, 2002; Xie *et al.*, 2003; Burgstahler *et al.*, 2006; Chin *et al.*, 2009). Another stream argues that firms with well-functioning internal governance can identify opportunistic earnings management. For examples, the numbers of board meetings, the diversity of expertise on the board, whether having female representation on the board, and composition and members' expertise of the audit and compensation committee, etc., all of above corporate governance indicators has the effects on alleviating the agency problem through rising internal monitoring capacities (Xie *et al.*, 2003; Abbott *et al.*, 2004; Cheng, 2004; Carcello *et al.*, 2006; Krishnan and Parsons, 2008; Adams and Ferreira, 2009; Carcello *et al.*, 2011; Badolato *et al.*, 2014).

Second, when information asymmetry is high, shareholders don't have enough resources or awareness to monitor managers' self-interest behaviors (Dye, 1988; Richardson, 2000). Several studies argue that increasing information disclosure can enlarge transparency and therefore reduces incentives that the management conduct earnings manipulations (Kasznik, 1999; Richardson, 2000; Lobo and Zhou, 2001; Jo and Kim, 2007). To be specific, the CGEM in Taiwan inspires firms to rise information disclosure leading to a reduction in earnings management.

Final, earnings management is not only an opportunistic self-interest behavior but relates to business ethics (Jones, 1991; Jones, 1995). Prior studies claim that firms that expend effort on social responsibility are likely to have higher ethical criteria to meet social expectations and obligations (Jones, 1995; Atkins, 2006, Mackey *et al.*, 2007). Specifically, socially responsible firms often provide more transparent and reliable financial information for investors. Kim *et al.* (2012) find that socially responsible firms tend to conduct less earnings management.

To summarize, a firm with a higher ranking denotes a more rigorous organizational structure, a better monitoring capacity, less information asymmetry between the management and shareholders, and a more ethical corporate culture, which makes earnings management lower. To this end, we propose our first hypothesis as following:

H1: The corporate governance ranking is negatively and significantly associated with the extent of earnings management.

As for companies, higher rankings may affect their reputation among investors, which has positive effects to their firm value (Han and Suk, 1998). Several studies have investigated the motivation of companies for firms improving governance and transparency. For example, Chen *et al.* (2007) indicates that firms with better rankings in the S&P transparency and disclosure often have higher equity liquidity. Patel and Dallas (2003) examine S&P transparency and disclosure ranking results, and find that high ranking firms are often valued higher than low ranking firms in the emerging market. Moreover, Doidge *et al.* (2007) utilize several mechanisms' governance ratings as proxies of firm-level choices of corporate governance to test how country characteristics influence firms' choices to improve their own governance and transparency. Their result shows that firms choose to improve governance depends on cost and benefit considerations.

Regarding the mechanism studies in Taiwan, Chang and Fang (2006) examine the effect of the information disclosure and evaluation system the implementation on earnings management, from which the Taiwanese CGEM inherits. They point out the evaluation result will affect investors' confidence; thus, firms pay attention to evaluation results and improve the extent to which they disclose information. Tai and Hwang (2020) test whether Taiwanese CGEM ranking results influence investors' reactions to Taiwanese listed firms. They document that abnormal and cumulative abnormal returns respond significantly and positively to firms

are announced ranked in the top 50%. They also find that when firms' ranking results are better than preceding announcements, abnormal and cumulative abnormal returns increase rapidly, as if investors were rewarding them. Moreover, Tai (2020) expands his study, and he finds that when firms regress in ranking results, firms' value often suffers a significant impact. This result implies if firms don't meet market expectations may bear an outrageous cost from investors' penalizations. These findings explain the outcome of Taiwanese CGEM is a material and reputational concern for the evaluated firm.

In sum, whether firms like to earn market recognition or avoid losing reputation, they may shape their corporate governance to pursue higher rankings and mitigating the extent of earnings management. On this account, we hypothesize that firms with the better performance in the CGEM result would mitigate, compared to the preceding year, the extent of earnings management, and propose our second hypothesis as following:

H2: The change of the corporate governance ranking is negatively and significantly associated with the change of the extent of earnings management.

Relative to non-family firms, family firms pay more attention to reputational concerns (Zellweger *et al.*, 2013; Deephouse and Jackiewicz, 2013). A common definition of the family firm is that members of the founding family are on the board or are blockholders of the company, and keep holding top positions in the management. Apparently, family firms are likely to have great opportunities for earnings management. Fan and Wang (2002) find that family firms in an insufficient investor protection environment, East Asia, tend to have lower earnings quality. However, extant studies demonstrate the crux of this issue is not mainly coming from the ability of which family firms manipulate earnings; it is coming from the incentive. When family members find that the potential cost of conducting earnings management is overwhelming, they will ease the expropriated behavior. Since the agency conflict of family firms is greater between dominant and minority shareholders than owners and managers, minority shareholders, anticipating dominant shareholders self-dealing, may penalize dominant shareholders by discounting the stock (Anderson and Reeb, 2003; Morck and Yeung, 2003; Wang, 2006; Chen *et al.* 2010). Consequently, family firms, in comparison with non-family firms, are cautious and careful about their reputations. Fan and Wang (2002) demonstrate that their findings are different from western countries where have superior investor protection regulations. Furthermore, Anderson and Reeb (2003) indicate that family firms are less engaged in earnings management than non-family firms because family members' reputations are tied to the firm. Chen *et al.* (2010) point out family firms are less tax aggressive to avoid the potential price discount arising from a damaged reputation. Moreover, Deephouse and Jackiewicz (2013) testify levels of family ownership are positively associated with favorable reputations. All in all, the CGEM in Taiwan supports a better environment for investors, which means family firms may risk more potential costs from investors' distrust than non-family firms when they

performed unfavorably in ranking exercises. For this reason, family firms may drive themselves to conduct better governance. Hence, we propose our third hypothesis as following:

H3: The effect of Taiwanese CGEM on earnings management is stronger in family firms than non-family firms.

3. Research Design

3.1 Regression Model

To establish whether Taiwanese CGEM ranking results influence firms self-limits earnings management, we estimate the following model:

$$ABSDA_{it} = \gamma_0 + \gamma_1 CGR_{it} + \gamma_2 SIZE_{it} + \gamma_3 LEV_{it} + \gamma_4 ABSDA_{it-1} + \gamma_5 OCF_{it} + \gamma_6 DEC_{it} + \gamma_7 CRP_{it} + \gamma_8 GROWTH_{it} + \varepsilon_{it}, \quad (1)$$

where:

$ABSDA_{it}$ = The absolute value of abnormal discretionary accruals in year t. The discretionary accruals are measured by the modified Jones model with ROA and the modified Jones model.

CGR_{it} = The ranking result of Corporate Governance Ranking in year t. It is divided into 7 grades by the class interval.

$SIZE_{it}$ = The natural log of total assets as of the end of year t.

LEV_{it} = The total liabilities scaled by total assets.

$ABSDA_{it-1}$ = The absolute value of abnormal discretionary accruals in year t-1.

OCF_{it} = The operating cash flow scaled by total assets in year t.

DEV_{it} = The divergence between the control right of ownership and the cash flow right in year t (control right% - cash flow right%).

CRP_{it} = Industry-adjusted return on assets (ROA) in year t.

$GROWTH_{it}$ = The growth rate of total sales for year t.

If firms in Taiwan value this mechanism and then restrain their earnings management behaviors, we expect a negative coefficient on CGR , γ_1 , when using effective abnormal accruals to capture earnings management. Moreover, we separate our original sample into two groups, the family firm and non-family firm, to estimate whether family firms are fully engaged in this mechanism than non-family firms. If this is true, it will be a more strongly negative coefficient on CGR in the family group. To alleviate statistical concern, we conduct a robust test by using preceding independent variables and current dependent variables to re-estimate model (1).

To estimate the effect of progress in ranking results on the change of earnings management, we conduct the second model as following:

$$\Delta ABSDA_{it} = \lambda_0 + \lambda_1 \Delta CGR_{it} + \lambda_2 SIZE_{it} + \lambda_3 LEV_{it} + \lambda_4 ABSDA_{it-1} + \lambda_5 OCF_{it} + \lambda_6 DEC_{it} + \lambda_7 CRP_{it} + \lambda_8 GROWTH_{it} + \varepsilon_{it}, \quad (2)$$

where:

$\Delta ABSDA_{it}$ = The change of the absolute value of abnormal discretionary accruals in year t, calculated by $ABSDA_{it} - ABSDA_{it-1}$.

ΔCGR_{it} = The change of the ranking level in year t, calculated by $CGR_{it} - CGR_{it-1}$.

When firms progress in the ranking result that means they putting in more effort on improving corporate governance, which leads to lower earnings management; thus, we expect a negative coefficient on ΔCGR , λ_1 , and vice versa.

3.2 Discretionary Accruals Measures

Our statistical approach in earnings management is based on the modified Jones model with ROA (Kothari *et al.*, 2005) and the modified Jones model (Dechow *et al.*, 1995). First of all, for the modified Jones model with ROA, total accruals (TA_{it}) are defined as the difference between net income and operating cash flows. Next, we estimate the normal accruals (NDA_{it}) by the model (4), where ΔREV_{it} , ΔREC_{it} and PPE_{it} is the change of total revenue, the change of accounting receivable, and the balance of fixed assets in year t, respectively. Finally, the abnormal accruals (DA_{it}) are measured as total accruals minus the estimated accruals, see the model (6). All accrual variables are scaled by the beginning of year t of total assets. Similar logic applies to the modified Jones model. This study focuses on the extent of earnings management including both increasing and decreasing in earnings manipulation. Hence, we use the absolute value of abnormal accruals.

$$TA_{it} = NI_{it} - CFO_{it}. \quad (3)$$

$$\frac{TA_{it}}{A_{it-1}} = \beta_0 + \beta_1 \frac{1}{A_{it-1}} + \beta_2 \left[\frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} \right] + \beta_3 \left[\frac{PPE_{it}}{A_{it-1}} \right] + \beta_4 ROA_{it-1} + \varepsilon_{it}. \quad (4)$$

$$NDA_{it} = \widehat{\beta}_0 + \widehat{\beta}_1 \frac{1}{A_{it-1}} + \widehat{\beta}_2 \left[\frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} \right] + \widehat{\beta}_3 \left[\frac{PPE_{it}}{A_{it-1}} \right] + \widehat{\beta}_4 ROA_{it-1}. \quad (5)$$

$$DA_{it} = \frac{TA_{it}}{A_{it-1}} - NDA_{it} = \varepsilon_{it}. \quad (6)$$

3.3 Corporate Government Ranking Results Measures

The FSC announces the CGEM result on an annual basis. All the listed firms on the Taiwan Stock Exchange (“TWSE”) and the Taipei Exchange (“TPEX”) are the targets of the evaluation.

Some specific situations will exclude the listed firm from the CGEM, for instance, (1) a firm publicly lists less than a year in the evaluation period, (2) a firm's stock is changed the trading method, (3) a firm's stock is suspended for trading, (4) Delisting firms. The 1st ranking result (2014) was announced only top 20% ranked firms. The 2nd ranking result (2015) was announced top 50% ranked firms. Starting the 3rd ranking result (2016), the FSC announces the full evaluation result. These ranking results are only announced evaluated firm's name with 7 class intervals, separately, top 5%, 6%-20%, 21%-35%, 36%-50%, 51%-65%, 66%-80%, 81%-100%. Based on announced intervals, we divided the ranking results into 7 grades and defined it as the *CGR* variable. Table 1 presents the distribution of ranking results.

To further test the relationship between the progress in the ranking result and the change of abnormal discretionary accruals, we define ΔCGR as the change of the ranking result in year t compared with preceding year. To illustrate, if firm i 's ranking level in 2016 is A (top 5%) and its level downgrades to C (21%-35%) in 2017, ΔCGR is defined as -2. If firm i 's ranking level is E (51%-65%) in 2016, and its level upgrades to A (top 5%), ΔCGR is defined as +4.

3.4 Control Variables

With reference to previous studies, we control for firm characteristics correlated to earnings management to ensure that our result are not driven by fundamental effects. We set *SIZE*, *LEV*, *OCF*, and *CRP* control variables to capture firm's size, leverage, operating cash flow, and profitability. First, prior studies find that firm size is associated with managers' self-interest behaviors because of the complexity of trading and the structure of the organization (Chow and Wong-Boren, 1987; Reynolds and Francis, 2000; Balsam *et al.*, 2003; Eng and Mak, 2003).

Table 1 The Sample of the CGEM Rankings and the CGR Distribution

Level code	Ranking results	CGR	2016		2017		Total
			TSE	OTC	TSE	OTC	
A	Top 5%	7	43	33	43	34	153
B	6%-20%	6	126	98	129	101	454
C	21%-35%	5	126	98	129	101	454
D	36%-50%	4	127	98	130	102	457
E	51%-65%	3	126	97	129	101	453
F	66%-80%	2	126	98	129	101	454
G	81%-100%	1	169	131	175	135	610
No ranking (Note)		0					
Subtotal observations			843	653	864	675	3,035
Total			1,496		1,539		
Note:							
Excludes firms, if it is classified the following situations:							
On the list within a year			56	36	49	77	218
Altered trading method, suspension for trading or to be delisted			35	55	31	54	175
Total			91	91	80	131	393
TSE : Listed firms on Taiwan Stock Exchange (TWSE)							
OTC : Over-the-counter firms on Taipei Exchange (TPEX)							

Second, if a firm is under high debt, its managers often conduct earnings management to avoid the breach of contract (Watts and Zimmerman, 1978). Hence, we set the *LEV* variable and expect it is positively related to earnings management. Third, we expect operating cash flows (*OCF*) are associated with a reduction in earnings management since managers have less incentive to manipulate earnings. Next, more profitable firms with less loss concern usually with a smaller extent of earnings management. Furthermore, Chang and Fang (2006) indicate that when the controlling shareholder's control rights exceeds the cash flow right, controlling shareholders tend to expropriate wealth from minority shareholders. Thus, we set *DEV* to capture the divergence between the control right and cash flow right. We also set the *Growth* variable to control for growth rates of sales as growing firms tend to be more aggressive, and in consequence, earnings quality will be impacted (Madhogarhia, et al., 2009). The final set of the control variable is *ABSDA_{t-1}*. We control preceding abnormal accruals for the reason that discretionary accruals in the previous year may reverse in the current period that may cause an effect on measuring discretionary accruals.

3.5 The Definition of Family Firms

According to prior literature that examines family firms in Taiwan, the TEJ database's definition is adopted for this study. The definition of family firm is presented in the following: (1)the chairman of the board and the CEO belongs to the same family, (2)the directors that

belong to family members are more than 50% on the board, and the friendly directors¹ and independent directors are both less than 33% on the board, (3)the directors that belong to family members are more than 33% and at least three family members that serve as directors, supervisors and CEO, (4)voting rights controlled by a family is more than the critical control level.

4. Sample Selection and Empirical Result

4.1 Sample Selection

We collect our sample from Taiwanese CGEM results. Due to only starting the 3rd round evaluation announced the full ranked firm, we choose the 3rd and 4th round result as our firm-year observations covering the period 2016 to 2017. Besides, for other control variables, we collect the financial data from Taiwan Economic Journal (TEJ) database. Since our study requires calculating the discretionary accruals in 2016 and 2017, we also collect ten-year front financial data from TEJ. Table 2, Panel A reports the process of sample selection. Initial sample is 3,147 observations in 2016 (1,575) and 2017 (1,572). Then we eliminate 156 observations in Securities Enterprises, Finance Service and Insurance industries, and 33 observations with incomplete financial information. Our final sample consists of 2958 observations for hypotheses 1 and 3, and for testing hypothesis 2 remains, testing the progress (regress) effects, 1,466 observations in 2017. To reduce the influence of extreme values, we winsorize all continuous variables at the 1 percent and 99 percent levels.

Panel B presents the industry distribution by TEJ codes and years. To avoid insufficient observations collected from single industry, we refer to Wang and Chang (2012), and divide our sample firms into 7 categories: (1) cement, constructions, iron & steel, (2) food, (3) textile, (4) plastics, chemicals, biotechnology & rubber, (5) electric machinery, appliance & cable, (6) electronics, (7) tourism & retail. We exclude some industries, such as ceramic, paper and pulp, automobile, culture, transportation, gasoline and electricity, and others, for the reason that each of these industries has inadequate observations and possesses unique characteristics that cannot be incorporated into other categories. The sample in 2016 and 2017 is 50.44% and 49.56, respectively, and electronics is the most significant industry that occupies 58.86%.

¹ When directors belong to different groups, but because of their friendly relationship, they will support each other in exercising operational rights. TEJ defines the friendly relationship in accordance with the following criteria: (1) the friendly entity is blood related to the ultimate controlling party; (2) the friendly entity and the ultimate controlling party are affinities; (3) originally belonged to the same group, but later separated and independent; (4) The company was founded by friends, but later they were independent and different groups; (5) others, TEJ recognizes.

Table 2 Sample Selection and Industry Distribution

Panel A : sample selection					
		2016	2017	Total	
Initial sample from TEJ database		1,575	1,572	3,147	
Less :					
Security Enterprises, Financial service and insurance industries		(78)	(78)	(156)	
Missing financial data		(5)	(28)	(33)	
Final sample for testing hypothesis 1 &3		1,492	1,466	2,958	
Final sample for testing hypothesis 2			1,466	1,466	
Panel B : Industry distribution by TEJ code and year					
TEJ code	Industry	2016	2017	Total	Pct.(%)
11,20,25	Cement, Constructions, Iron and steel	129	127	256	8.65
12	Food	29	29	58	1.96
14	Textiles	57	57	114	3.85
13, 17, 21	Plastics, Chemicals, Biotechnology & Rubber	208	201	409	13.83
15,16	Electric machinery, Appliance & Cable	117	116	233	7.88
23	Electronics	878	863	1,741	58.86
27,29	Tourism & Retail	74	73	147	4.97
Total		1,492	1,466	2,958	100.00
Pct.(%)		50.44	49.56	100	

4.2 Empirical Results

4.2.1 Descriptive Statistics and Correlations

Panel A of Table 3 presents descriptive statistics for all variables used in the test of hypotheses 1 and 3. The mean and median values of $ABSDA_Kothari_t$ are 0.057 and 0.039, respectively. The mean and median values of CGR_t are 3.021 and 3.0, respectively. Panel B presents descriptive statistics for variables used in the test of hypothesis 2. The mean and median values of $\Delta ABSDA_Kothari_t$ are 0.005 and 0.002, respectively. The mean and median values of ΔCGR_t are 0.081 and 0.00, respectively.

Table 4 presents Pearson and Spearman correlation coefficients of our all variables. The significance of correlations between $ABSDA_Kothari_t$ and CGR_t supports our conjecture of that the mechanism in Taiwan influences firms' earnings management. Pearson coefficients between all variables are less than 0.4 and Spearman coefficients are less than 0.6. This outcome indicates our regression models are less likelihood of multicollinearity problems.

4.2.2 Regression Results

Table 5 presents our multivariate results regarding hypothesis 1 on whether Taiwanese CGEM rankings are associated with lower earnings management. The coefficient of *ABSDA_Kothari* and *ABSDA_MoJones* with *CGR* is negative and significant ($\gamma_1^k = -0.103$, t-

Table 3 Descriptive Statistics

Panel A : Full sample in 2016 and 2017								
Variable	N	Mean	Std.	Minimum	First quartile	Median	Third quartile	Maximum
<i>ABSDA_{it}</i>	2958	0.057	0.061	0.001	0.017	0.039	0.074	0.345
<i>CGR_{it}</i>	2958	3.021	2.072	0.000	1.000	3.000	5.000	7.0
<i>SIZE_{it}</i>	2958	15.238	1.469	9.830	14.265	15.071	16.049	21.949
<i>LEV_{it}</i>	2958	0.408	0.190	0.444	0.263	0.402	0.537	0.959
<i>ABSDA_{it-1}</i>	2958	0.056	0.056	0.001	0.018	0.040	0.074	0.307
<i>OCF_{it}</i>	2958	0.050	0.120	-1.882	0.005	0.057	0.112	0.692
<i>DEV_{it}</i>	2958	6.074	11.427	0.000	0.190	1.130	5.323	55.930
<i>CRP_{it}</i>	2958	-0.053	19.610	-111.161	-4.763	2.889	9.799	29.530
<i>GROWTH_{it}</i>	2958	0.136	2.230	-1.000	-0.090	0.011	0.118	87.167

Panel B : The sample for testing level changed model								
Variable	N	Mean	Std.	Minimum	First quartile	Median	Third quartile	Maximum
Δ <i>ABSDA_{it}</i>	1466	0.005	0.067	-0.293	-0.029	0.002	0.034	0.332
Δ <i>CGR_{it}</i>	1466	0.081	1.201	-6.000	0.000	0.000	0.000	7.000
<i>SIZE_{it}</i>	1466	15.266	1.438	12.173	14.291	15.097	16.067	19.773
<i>LEV_{it}</i>	1466	0.410	0.190	0.044	0.263	0.410	0.539	0.959
<i>OCF_{it}</i>	1466	0.041	0.098	-0.290	-0.008	0.045	0.099	0.278
<i>DEV_{it}</i>	1466	5.927	11.233	0.00	0.180	1.095	5.190	55.930
<i>CRP_{it}</i>	1466	-0.179	18.988	-111.161	-5.168	2.025	9.442	40.100
<i>GROWTH_{it}</i>	1466	0.070	0.406	-0.715	-0.081	0.020	0.134	2.648

Note:

Variable definitions: *ABSDA_{it}* = The absolute value of abnormal discretionary accruals in year t. The discretionary accruals is measured by the modified Jones model with ROA and the modified Jones model.; *CGR_{it}* = The ranking of the CGEM in Taiwan in year t, which is divided into 7 grades by the class interval.; *SIZE_{it}* = The natural log of total assets as of the end of year t.; *LEV_{it}* = The total liabilities scaled by total assets.; *ABSDA_{it-1}* = The absolute value of abnormal discretionary accruals in year t-1.; *OCF_{it}* = The operating cash flow scaled by total assets in year t.; *DEV_{it}* = The divergence between the control right of ownership and the cash flow right in year t (control right% - cash flow right%); *CRP_{it}* = Industry-adjusted return on assets (ROA) in year t.; *GROWTH_{it}* = The growth rate of total sales for year t.; Δ *ABSDA_{it}* = The change of the absolute value of abnormal discretionary accruals in year t, calculated by *ABSDA_{it}* - *ABSDA_{it-1}*; Δ *CGR_{it}* = The change of the ranking level in year t, calculated by *CGR_{it}* - *CGR_{it-1}*.

Table 4 Pearson and Spearman Correlation Matrix

Panel A : Full samples (N=2958)

	<i>ABSDA_{it}</i>	<i>CGR_{it}</i>	<i>SIZE_{it}</i>	<i>LEV_{it}</i>	<i>ABSDA_{it-1}</i>	<i>OCF_{it}</i>	<i>DEV_{it}</i>	<i>CRP_{it}</i>	<i>GROWTH_{it}</i>
<i>ABSDA_{it}</i>	1	-0.107** (0.000)	-0.15** (0.000)	0.044** (0.016)	0.224** (0.000)	-0.09** (0.000)	-0.002 (0.926)	-0.081** (0.000)	0.006 (0.744)
<i>CGR_{it}</i>	-0.113** (0.000)	1	0.353** (0.000)	-0.1** (0.000)	-0.123** (0.000)	0.204** (0.000)	0.161** (0.000)	0.228** (0.000)	0.064** (0.000)
<i>SIZE_{it}</i>	-0.153** (0.000)	0.388** (0.000)	1	0.304** (0.000)	-0.148** (0.000)	0.145** (0.000)	0.07** (0.000)	0.216** (0.000)	0.089** (0.000)
<i>LEV_{it}</i>	0.024 (0.194)	-0.047* (0.011)	-0.036* (0.048)	1	0.027 (0.149)	-0.167** (0.000)	-0.043* (0.019)	-0.08** (0.000)	0.097** (0.000)
<i>ABSDA_{it-1}</i>	0.308** (0.000)	-0.119** (0.000)	-0.154** (0.000)	-0.007 (0.694)	1	-0.069** (0.000)	-0.03 (0.108)	-0.075** (0.000)	-0.019 (0.307)
<i>OCF_{it}</i>	-0.188** (0.000)	0.195** (0.000)	0.214** (0.000)	-0.029 (0.113)	-0.088** (0.000)	1	0.058** (0.002)	0.578** (0.000)	0.134** (0.000)
<i>DEV_{it}</i>	0.030 (0.104)	0.083** (0.000)	0.043* (0.020)	0.003 (0.863)	0.004 (0.846)	0.036 (0.053)	1	0.124** (0.000)	0.065** (0.000)
<i>CRP_{it}</i>	-0.048** (0.009)	0.146** (0.000)	0.157** (0.000)	-0.012 (0.512)	-0.038* (0.041)	0.253** (0.000)	0.012 (0.498)	1	0.370** (0.000)
<i>GROWTH_{it}</i>	0.163** (0.000)	-0.003 (0.849)	-0.016 (0.394)	0.006 (0.746)	0.025 (0.167)	-0.060** (0.001)	0.033 (0.072)	0.014 (0.431)	1

Note:

Pearson coefficient is showed in upper diagonal, Spearman coefficient is in below diagonal.

* and ** mean significance at the 0.1 and 0.05 respectively.

Variable definitions are the same as table 3.

Table 4 Pearson and Spearman Correlation Matrix (cont'd)

Panel B : Samples for testing level changed model (N=1466)

	$\Delta ABSDA_{it}$	ΔCGR_{it}	$SIZE_{it}$	LEV_{it}	OCF_{it}	DEV_{it}	CRP_{it}	$GROWTH_{it}$
$\Delta ABSDA_{it}$	1	-0.006 (0.827)	-0.036 (0.167)	0.001 (0.962)	-0.021 (0.419)	-0.015 (0.555)	0.005 (0.862)	0.032 (0.216)
ΔCGR_{it}	-0.017 (0.508)	1	0.002 (0.925)	0.022 (0.404)	0.058* (0.027)	0.023 (0.370)	0.089** (0.001)	0.084** (0.001)
$SIZE_{it}$	-0.025 (0.339)	-0.018 (0.487)	1	0.309** (0.000)	0.159** (0.000)	0.077** (0.003)	0.229** (0.000)	0.132** (0.000)
LEV_{it}	0.069** (0.008)	-0.003 (0.916)	-0.034 (0.197)	1	-0.178** (0.000)	-0.038 (0.142)	-0.077** (0.003)	0.119** (0.000)
OCF_{it}	-0.089** (0.001)	0.075** (0.004)	0.245** (0.000)	-0.014 (0.598)	1	0.071** (0.007)	0.529** (0.000)	0.129** (0.000)
DEV_{it}	0.008 (0.752)	0.049 (0.061)	0.056* (0.033)	0.003 (0.915)	0.039 (0.135)	1	0.148** (0.000)	0.1** (0.000)
CRP_{it}	0.012 (0.642)	0.048 (0.068)	0.149** (0.000)	-0.006 (0.804)	0.201** (0.000)	0.000 (0.997)	1	0.318** (0.000)
$GROWTH_{it}$	0.057* (0.030)	0.072** (0.006)	0.016 (0.539)	0.031 (0.231)	0.058* (0.027)	0.045 (0.082)	0.060* (0.021)	1

Note:

Pearson coefficient is showed in upper diagonal, Spearman coefficient is in below diagonal.

* and ** denote significance at the 0.1 and 0.05 levels, respectively.

Variable definitions are the same as table 3.

value=-1.813; $\gamma_1^M = -0.111$, t-value=-1.930). This evidence supports our hypothesis 1 and indicates the effects of the CGEM in Taiwan on earnings management, which proves this mechanism is not a superficial exercise.

Table 6 presents our multivariate results for our second hypothesis on whether progress in ranking results leads managers of evaluated firms to self-limit earnings management more. The coefficient of $\Delta ABSDA_{Kothari}$ and $\Delta ABSDA_{MoJones}$ with ΔCGR is -0.084 and -0.121. However, we can't find the association between earnings management and the change of ranking levels in magnitude (t-value^K=-0.567; t-value^M=-0.121). This result doesn't provide adequate evidence to support our hypothesis.

Table 5 The Effect of Rankings on Earnings Management

Model 1:					
$ABSDA_{it}^a = \gamma_0 + \gamma_1 CGR_{it} + \gamma_2 SIZE_{it} + \gamma_3 LEV_{it} + \gamma_4 ABSDA_{it-1} + \gamma_5 OCF_{it} + \gamma_6 DEV_{it} + \gamma_7 CRP_{it} + \gamma_8 GROWTH_{it} + \varepsilon_{it}$					
		<i>ABSDA_Kothari</i>		<i>ABSDA_MoJones</i>	
Variable	Predicted sign	Coefficient	T value	Coefficient	T value
Intercept		9.852 ***	7.697	9.983 ***	7.756
<i>CGR_{it}</i>	-	-0.103 *	-1.813	-0.111 *	-1.930
<i>SIZE_{it}</i>	?	-0.363 ***	-4.164	-0.373 ***	-4.261
<i>LEV_{it}</i>	+	1.271 **	2.043	1.330 **	2.126
<i>ABSDA_{it-1}</i>	+	29.697 ***	15.777	30.136 ***	15.921
<i>OCF_{it}</i>	-	-3.356 ***	-3.319	-3.364 ***	-3.308
<i>DEV_{it}</i>	+	0.018 **	1.990	0.017 *	1.880
<i>CRP_{it}</i>	+	-0.023 ***	3.539	-0.028 ***	-4.270
<i>GROWTH_{it}</i>	+	0.320 ***	6.913	0.323 ***	6.938
<i>INDUSTRY</i>		Controlled		Controlled	
Adj. R ²		0.158		0.165	
F value (p)		40.435 (<0.01)		42.532 (<0.01)	
N		2,957		2,957	

Note:

a: We multiply *ABSDA* by 100.

*, **, *** denote significance at the 0.1, 0.05, and 0.01 levels, respectively.

Variable definitions: *ABSDA_{it}* = The absolute value of abnormal discretionary accruals in year t. The discretionary accruals is measured by the modified Jones model with ROA and the modified Jones model.; *CGR_{it}* = The ranking of the CGEM in Taiwan in year t, which is divided into 7 grades by the class interval.; *SIZE_{it}* = The natural log of total assets as of the end of year t.; *LEV_{it}* = The total liabilities scaled by total assets.; *ABSDA_{it-1}* = The absolute value of abnormal discretionary accruals in year t-1.; *OCF_{it}* = The operating cash flow scaled by total assets in year t.; *DEV_{it}* = The divergence between the control right of ownership and the cash flow right in year t (control right% - cash flow right%); *CRP_{it}* = Industry-adjusted return on assets (ROA) in year t.; *GROWTH_{it}* = The growth rate of total sales for year t.

Table 6 The Effect of the Subsequent Change of Rankings on Earnings Management

Model 2:

$$\Delta ABSDA_{it}^a = \lambda_0 + \lambda_1 \Delta CGR_{it} + \lambda_2 SIZE_{it} + \lambda_3 LEV_{it} + \lambda_4 ABSDA_{it-1} + \lambda_5 OCF_{it} + \lambda_6 DEV_{it} + \lambda_7 CRP_{it} + \lambda_8 GROWTH_{it} + \varepsilon_{it}$$

Variable	Predicted sign	ABSDA_Kothari		ABSDA_MoJones	
		Coefficient	T value	Coefficient	T value
Intercept		1.926	0.909	2.320	2.320
ΔCGR_{it}	-	-0.084	-0.567	-0.121	-.121
$SIZE_{it}$?	-0.098	-0.704	-0.087	-.087
LEV_{it}	+	-0.434	-0.421	-0.821	-.821
OCF_{it}	-	-3.957 *	-1.879	-7.136 **	-7.136
DEV_{it}	+	0.012	0.772	0.015	.015
CRP_{it}	+	-0.012	-1.034	0.006	.006
$GROWTH_{it}$	+	1.691 ***	3.779	1.787 ***	1.787
<i>INDUSTRY</i>		Controlled		Controlled	
Adj. R ²		0.011		0.003	
F value (p)		2.199***		1.374	
N		1,465		1,465	

Note:

a: We multiply *ABSDA* by 100

*, **, *** denote significance at the 0.1, 0.05, and 0.01 levels, respectively.

Variable definitions: $\Delta ABSDA_{it}$ = The change of the absolute value of abnormal discretionary accruals in year t, calculated by $ABSDA_{it} - ABSDA_{it-1}$; ΔCGR_{it} = The change of the ranking level in year t, calculated by $CGR_{it} - CGR_{it-1}$; $SIZE_{it}$ = The natural log of total assets as of the end of year t; LEV_{it} = The total liabilities scaled by total assets; DEV_{it} = The divergence between the control right of ownership and the cash flow right in year t (control right% - cash flow right%); CRP_{it} = Industry-adjusted return on assets (ROA) in year t; $GROWTH_{it}$ = The growth rate of total sales for year t.

Table 7 presents our test of hypothesis 3 on whether family firms attach more importance to the mechanism than non-family firms. We split our sample into two groups. Panel A provides estimations of the group of family firms and panel B provides estimations of the group of non-family firms. We find significantly negative coefficients on *CGR* ($\gamma_1^k = -0.166$, t-value = -2.513; $\gamma_1^M = -0.169$, t-value = -2.566) in the group of family firms, and the coefficient of *ABSDA_Kothari* and *ABSDA_MoJones* with *CGR* in the group of non-family firms, they are not statistically significant ($\gamma_1^k = 0.047$, t-value = 0.404; $\gamma_1^M = 0.035$, t-value = 0.300). This result indicates that the CGEM rankings have effects of mitigating earnings management in family firms, which is not found in non-family firms. This finding supports our hypothesis 3.

4.2.2 Additional Analysis

Table 7 The Effect of Rankings on Earnings Management,
The Comparison of Family and Non-Family Firms

Model 1:						
$ABSDA_{it}^a = \gamma_0 + \gamma_1 CGR_{it} + \gamma_2 SIZE_{it} + \gamma_3 LEV_{it} + \gamma_4 ABSDA_{it-1} + \gamma_5 OCF_{it} + \gamma_6 DEC_{it} + \gamma_7 CRP_{it} + \gamma_8 GROWTH_{it} + \varepsilon_{it}$						
Panel A : Family firms (N=2,190)						
Variable	<i>ABSDA_Kothari</i>			<i>ABSDA_MoJones</i>		
	Coeff.		T value	Coeff.		T value
Intercept	10.472	***	7.259	10.625	***	7.341
<i>CGR_{it}</i>	-0.166	***	-2.513	-0.169	**	-2.556
<i>SIZE_{it}</i>	-0.398	***	-4.000	-0.407	***	-4.081
<i>LEV_{it}</i>	1.482	**	2.083	1.471	**	2.060
<i>ABSDA_{it-1}</i>	29.004	***	13.447	29.261	***	13.521
<i>OCF_{it}</i>	-4.144	***	-3.463	-4.177	***	-3.478
<i>DEV_{it}</i>	0.020	*	1.860	0.018	*	1.691
<i>CRP_{it}</i>	-0.012		-1.585	-0.017	**	-2.223
<i>GROWTH_{it}</i>	0.296	***	6.508	0.299	***	6.564
<i>INDUSTRY</i>	Controlled			Controlled		
Adj. R ²	0.162			0.169		
F value (p)	31.196 (<0.01)			32.650 (<0.01)		

Panel B : Non-family firms (N=765)						
Variable	<i>ABSDA_Kothari</i>			<i>ABSDA_MoJones</i>		
	Coeff.		T value	Coeff.		T value
Intercept	9.164	**	3.058	9.064	***	2.989
<i>CGR_{it}</i>	0.047		0.404	0.035		0.300
<i>SIZE_{it}</i>	-0.326	*	-1.804	-0.330	*	-1.800
<i>LEV_{it}</i>	0.645	**	0.505	0.907		0.700
<i>ABSDA_{it-1}</i>	29.008	***	7.482	30.035	***	7.657
<i>OCF_{it}</i>	-1.287		-0.672	-1.379		-0.712
<i>DEV_{it}</i>	0.016		0.910	0.017		0.947
<i>CRP_{it}</i>	-0.061	***	-4.590	-0.066	***	-4.905
<i>GROWTH_{it}</i>	2.025	***	4.682	1.989	***	4.545
<i>INDUSTRY</i>	Controlled			Controlled		
Adj. R ²	0.160			0.168		
F value (p)	11.381 (<0.01)			11.939 (<0.01)		

Note:

a: We multiply *ABSDA* by 100.

*, **, *** denote significance at the 0.1, 0.05, and 0.01 levels, respectively.

The definition of family firms is adopted from TEJ database.

Variable definitions: *ABSDA_{it}* = The absolute value of abnormal discretionary accruals in year t. The discretionary accruals is measured by the modified Jones model with ROA and the modified Jones model.; *CGR_{it}* = The ranking of the CGEM in Taiwan in year t, which is divided into 7 grades by the class interval.; *SIZE_{it}* = The natural log of total assets as of the end of year t.; *LEV_{it}* = The total liabilities scaled by total assets.; *ABSDA_{it-1}* = The absolute value of abnormal discretionary accruals in year t-1.; *OCF_{it}* = The operating cash flow scaled by total assets in year t.; *DEV_{it}* = The divergence between the control right of ownership and the cash flow right in year t (control right% - cash flow right%); *CRP_{it}* = Industry-adjusted return on assets (ROA) in year t.; *GROWTH_{it}* = The growth rate of total sales for year t.

An alternative possibility for our findings is that evaluated firms with top-ranking levels are usually blue-chip companies, which already have substantial governance and less earnings management. Hence, we utilize the preceding year's data to capture the effects of the CGEM in Taiwan on earnings management. The logic is if earnings management is originally impaired by superior firms, not the CGEM, then we aren't supposed to find a significant relationship between *ABSDA_{it}* and *CGR_{it-1}*. Table 8 presents our additional analysis, and the coefficient of *ABSDA_Kothari_{it}* and *ABSDA_MoJones_{it}* with *CGR_{it}* is significantly negative ($\gamma_1^k = -1.324$, t-value = -2.309 $\gamma_1^M = -1.471$, t-value = -2.544). This result is consisted with table 5's findings.

Table 8 The Effect of Preceding Rankings on Earnings Management

Model:						
$ABSDA_{it}^b = \gamma_0 + \gamma_1 CGR_{it-1} + \gamma_2 SIZE_{it-1} + \gamma_3 LEV_{it-1} + \gamma_4 ABSDA_{it-2} + \gamma_5 OCF_{it-1} + \gamma_6 DEC_{it-1} + \gamma_7 CRP_{it-1} + \gamma_8 GROWTH_{it-1} + \varepsilon_{it}$						
	<i>ABSDA_Kothari</i>			<i>ABSDA_MoJones</i>		
Variable	Coefficient	T value		Coefficient	T value	
Intercept	78.982 **	1.966		95.889 **	2.368	
<i>CGR_{it-1}</i>	-1.324 **	-2.309		-1.471 **	-2.544	
<i>SIZE_{it-1}</i>	-4.846 ***	-5.891		-5.061 ***	-6.105	
<i>LEV_{it-1}</i>	1.029 ***	3.170		1.020 ***	3.117	
<i>ABSDA_{it-2}</i>	176.366 ***	10.065		173.141 ***	9.804	
<i>OCF_{it-1}</i>	-70.381 ***	-7.399		-78.365 ***	-8.174	
<i>DEV_{it-1}</i>	0.206 **	2.295		0.197 **	2.186	
<i>CRP_{it-1}</i>	0.000	-0.038		-0.002	-0.238	
<i>GROWTH_{it-1}</i>	0.003	0.239		0.004	0.243	
<i>INDUSTRY</i>	Controlled			Controlled		
Adj. R ²	0.108			0.112		
F value (p)	24.779 (<0.01)			25.876 (<0.01)		
Sample firms	2,957			2,957		

Note:

b: We multiply ABSDA by 1,000

*, **, *** denote significance at the 0.1, 0.05, and 0.01 levels, respectively.

Variable definitions: *ABSDA_{it}* = The absolute value of abnormal discretionary accruals in year t. The discretionary accruals is measured by the modified Jones model with ROA and the modified Jones model.; *CGR_{it-1}* = The ranking of the CGEM in Taiwan in year t-1, which is divided into 7 grades by the class interval.; *SIZE_{it-1}* = The natural log of total assets as of the end of year t-1.; *LEV_{it-1}* = The total liabilities scaled by total assets in year t-1.; *ABSDA_{it-2}* = The absolute value of abnormal discretionary accruals in year t-2.; *OCF_{it-1}* = The operating cash flow scaled by total assets in year t-1.; *DEV_{it-1}* = The divergence between the control right of ownership and the cash flow right in year t-1 (control right%- cash flow right%); *CRP_{it-1}* = Industry-adjusted return on assets (ROA) in year t-1.; *GROWTH_{it-1}* = The growth rate of total sales for year t-1.

5. Discussion and Conclusion

This study objects to test the effectiveness of the CGEM in Taiwan, and whether firms value this mechanism then self-limit earnings management. We utilize full announced ranking results and two different measures to capture abnormal discretionary accruals. We find that the higher performance in the ranking result, the lower earnings management has been conducted. This finding supports our first hypothesis and documents the effect of Taiwanese CGEM on earnings management. Furthermore, we explore whether firms with progress in the ranking result tend to lower the extent of earnings management. However, we don't find the relationship between the change of ranking level and the change of absolute of abnormal accruals in

magnitude. This result may be caused by our study restrictions so that we can't observe the variation of earnings management in detail. Finally, we examine whether family firms in Taiwan attach greater importance in this mechanism than non-family firms, and our result support this hypothesis. This finding confirms the argument that family firms have more reputational concerns.

Our study adds several contributions to corporate governance literature, especially, we supplement Shiue *et al.*'s (2017) work on the topic of the CGEM in Taiwan. We provide evidence to prove this mechanism is not a mere superficial formality; it serves an actual function. In addition, our finding suggests family firms in Taiwan have more reputational concerns, which is different from Fan and Wang's (2002) argument that family firms in East Asia tend to have inferior earnings quality. It is the difference that highlights Taiwanese CGEM making material influence among investors. Consequently, family firms risk more costs when the reputation is failed. It is notable that firms constrain their earnings management to avoid investors' poor perception impacting the firm value, which suggests a way that the governmental authority could utilize public pressure to mitigate the private firms' earnings management behaviors.

This study and Shiue *et al.* (2017) explores the same issue that examines the effectiveness of the CGEM in Taiwan. However, there are several differences in this study. First, Shiue *et al.*'s work mainly discusses how this brand new mechanism affects firms in Taiwan when it is initiated. Specifically, they compare earnings management pre and post-initiation of this mechanism. However, we focus on the constant causal effect of this mechanism. Second, Shiue *et al.* adopt the 1st ranking of the CGEM in 2014 which was announced by only the top 20% ranked firms. They can only divide all the evaluated firms into three groups (top 5%, 6%-20%, and others) but we use fully disclosed ranking. Finally, we expand our research question on the topic of family firms, and discover this mechanism is more effective on family firms.

There are some restrictions we can't control in this study. For instance, Taiwan's CGEM is implemented less than a decade to this day, still less the first two years' results are not announced with the full ranked firms. Therefore, it hardly observes the effect of progressing in the ranking result when the study period is too short. Moreover, ranking results are announced at class intervals, which we can't observe the variation of earnings management when the evaluated firms are in a same class.

Since we document that firms in Taiwan will self-limits earnings management for reputation considerations, it would be interesting for the following research to examine whether firms utilize this mechanism to redeem their honors when disgraced with scandals.

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