



How does earnings management impact annual report readability?

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Abstract

This research investigates the relationship between earnings management and annual report readability for companies listed on the Singapore Stock Exchange (SGX). Research on earnings management (EM) and the ability to read the annual report play a crucial role for investors as well as other stakeholders. The extent of earnings management can be determined based on annual reports. The analysis is based on the data of 251 domestic companies listed on the SGX from 2016 to 2021. Regression analysis of panel data was conducted using STATA version 15 software in this research. The result shows that companies with more aggressive earnings management tend to make annual reports more complex and, hence, less readable. In addition, the study also shows that the impact of earnings management on the annual report readability for enterprises of different sizes, profits, ages, and levels of financial distress is the same. Theoretically, the findings of this research for a developed financial market in Asia (Singapore) further confirm and reinforce the findings about the relationship between earnings management and report readability. In addition, one may draw important practical implications for investors as well as stakeholders in general; in particular, stakeholders may have more evidence for suspicions about earnings management whenever the annual reports become more difficult to read and understand.

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1. Introduction

Managers of listed companies are required to comprehensively communicate corporate operations and business results to the public, typically through alternative forms of corporate disclosures, notably annual reports. Expectedly, the communication should be conducted properly, that is, investors, stakeholders, and the public in general are provided with the best available and accurate information about the companies. Readability of reports, or the level of difficulty to read the reports, is deemed to be significant for such a proper, effective, and efficient communication of companies' information to the public (Ertugrul, Lei, Qiu, & Wan, 2017; Loughran & McDonald, 2014), and that is in fact reflected in regulators' documents such as the Securities Exchange Commission's ("SEC") initiative requiring the use of plain English in certain prospectus

and encouraging the use of plain English in others as well as other forms of communication with shareholders and the public in general (Loughran & McDonald, 2014; McClane, 2018).¹

Readability, or equivalently complexity and ambiguity, of reports and the quality of corporate disclosure practices in general is deemed to have effects on investors' confidence (Machuga & Teitel, 2007). Mechanically, annual reports are introduced with the expectation of reducing, and even solving the problem of information asymmetry between enterprises and stakeholders (Curtis, 1995, 1998; Ertugrul et al., 2017). Stakeholders normally expect to receive transparent, complete, and understandable reports. Such reports will help them obtain complete and accurate information about the enterprise (Cazier & Pfeiffer, 2016; Huddart, Ke, & Shi, 2007). However, annual reports do not always meet stakeholder expectations; information in the annual reports is not always helpful to stakeholders (Curtis, 1995, 1998).

The readability of reports can be affected by various factors, and in turn, they contain information about different aspects of the company's concealed situation and management's behaviors, including earnings management. A report produced can be easy to read or difficult to read, depending on the words or intent of the administrators (Lim, Chalmers, & Hanlon, 2018). Easy-to-read reports are often issued when a company does not intend to conceal its information, typically when the company is performing well (Lo, Ramos, & Rogo, 2017). Conversely, having adverse information or problems in company operations may make it possible for companies to generate reports that are more complicated or difficult to read (Huddart et al., 2007; Lim et al., 2018). Among the pieces of information managers want to hide in financial statements, as figured out by many researchers, is earnings management (Ajina, Laouiti, & Msolli, 2016; Lo et al., 2017).

Using accounting techniques such as earnings management can cause legal or reputational disadvantages in the market (Ajina et al., 2016; Machuga & Teitel, 2007). When there are impacts associated with earnings management, the information on the report is no longer completely transparent and accurate. Moreover, this seems to go against the objective of the annual report, as this is considered an official information channel that reflects the reality of the company (Ajina et al., 2016; Tomoni, 2012). In such a case, companies tend to issue reports that are more difficult to read, using complex language that is difficult for readers to decipher, but that are frauds or inadequacies of the company (Ajina et al., 2016; Li, 2008). Therefore, readers or stakeholders expect an easy-to-read report to obtain the best information from the annual report (Ajina et al., 2016).

In this paper, we conduct an empirical investigation of the relationship between earnings management and annual report readability with data from Singapore financial markets, specifically 251 domestic companies listed on the Singapore Stock Exchange (SGX). Singapore is chosen for this research as it is one of the five largest financial centers in the world (after New York, London, Shanghai, and Hong Kong) (Wardle & Mainelli, 2021), and hence high standards of corporate disclosure and reporting are expected. The study will be expected to detect the existence of a relationship between earnings adjustment and annual report readability in the world's leading major financial market with credible data and, hence, a credible analysis. For empirical analysis, we use the Fog Index to measure readability (Li, 2008) and the Difference Generalized Method of Moments (DGMM) model to handle and analyze panel data of domestic companies listed on the Singapore Stock Exchange (SGX). We find that companies that conduct more aggressive earnings management tend to produce reports that are more difficult to read, and vice versa. This result holds for companies of different sizes, profits, ages, and financial distress status.

With data from Singapore, a developed financial market in Asia with high standards of corporate disclosure, our research should help people who are looking into the link between earnings management and annual report readability (Ajina et al., 2016; Bloomfield, 2008) come to solid conclusions. Our findings reinforce the set of findings that a higher degree of earnings management is associated with a lower readability level of annual reports. From another perspective, this paper can be considered a new study related to earnings management and annual report readability in the Singapore market.

2. Literature Review

2.1 Earnings Management

Earnings management researchers are interested in whether or not companies engage in manipulation activities and how non-apparent earnings management can be quantified. Earnings are composed of two components: operating cash flows and accruals. While cash flows cannot be altered, managers can manipulate earnings by exercising allowable discretionary judgments in calculating and reporting specific accruals (Ajina et al., 2016). Agency theory explains well for earnings management and annual reports' readability (Ajina et al., 2016). Managers tend to maximize corporate profits and are willing to ignore shareholder risks (Fama & Jensen, 1983; Holmström, 1979; Jensen & Meckling, 1976). Therefore, the earnings management is targeted to provide good information about the profit in the reports.

Khelil-Rhouma and Hamed-Sidhom (2021) examined how companies' practices in managing accounting earnings relate to the quality of non-financial information disclosed in their annual reports. They found that manipulative upward earnings management is associated with increased disclosure of mandatory

¹ In 1998, the SEC adopted a rule that plain English is required for certain sections of companies' prospectuses; later, the Plain Writing Act of 2010 (Act) was enacted to regulate a broader range of government documents (<https://www.sec.gov/plainwriting>) with the intent and belief: "Plain language makes it easier for the public to read, understand, and use government communications" (<https://www.plainlanguage.gov/>).

environmental information. However, this disclosure doesn't seem to enhance the objectivity of the information; instead, it primarily serves as a means to portray regulatory compliance and divert attention from potential financial reporting manipulation. These findings support the concept of a substitution relationship between financial and non-financial reporting. Interestingly, companies employing more aggressive earnings management tend to provide less comprehensive mandatory reporting.

2.2. Annual Reports and Annual Reports Readability

Annual reports are declared and published by companies listed on the stock exchange following the law on the operation of the stock market. This is an official source of information for stakeholders such as investors, creditors, and shareholders (Ertugrul et al., 2017; Lim et al., 2018). In addition, the annual report includes a comprehensive database of the company's past achievements and challenges (Curtis, 1995, 1998). Moreover, the annual report will help stakeholders capture the necessary information about the company's activities that interest them (Curtis, 1995, 1998; Ertugrul et al., 2017). Therefore, annual reports are considered helpful to stakeholders. However, its usefulness depends on whether the report's content is complete and understandable (Curtis, 1998). Therefore, making the annual report easy to understand or difficult to understand is considered the strategy of the report builder (Lim et al., 2018).

Klare (1963) focuses on researching writing style rather than the content, fluency, or organization of the text. According to Klare (1963), the Fog Index is also effectively used to assess readability. However, some studies suggest that readability is about how engaging the content is for readers (Davison & Kantor, 1982; McLaughlin, 1969). According to these researchers, the "background knowledge assumed by the reader" is more important than "trying to make a text fit a level of readability defined by a formula" (Davison & Kantor, 1982).

Annual reports' readability plays a pivotal role in ensuring effective communication between companies and their stakeholders. The readability of these reports is essential because it determines how easily investors, analysts, and other interested parties can understand the financial health and performance of a company. A well-structured and clear annual report provides valuable insights into a company's strategic goals, financial results, and risk factors. Companies have a vested interest in producing readable annual reports because they directly influence investors' perceptions and decisions. Reports that are too difficult to understand may lead to confusion, skepticism, or reduced confidence in the company's financial management. Conversely, clear and transparent reports can enhance a company's reputation and credibility, potentially attracting more investors and positively affecting stock prices.

2.3. Earnings Management and Annual Reports Readability

In the literature investigating the relationship between earnings management and annual report readability (Ajina et al., 2016; Bloomfield, 2008; Lo et al., 2017), overall, the findings to some extent indicate a level of controversy about the relationship. To demonstrate this, some studies show that earnings management has a positive impact on the difficulty of reading reports (Ajina et al., 2016; Bloomfield, 2008). In other words, when companies conduct more aggressive earnings management, annual reports can be constructed more complexity (Lim et al., 2018; Rutherford, 2003). In contrast, some other studies find that high earnings management leads to easier-to-read reports when profit factors are inflated and more attractive to stakeholders.

Lo et al. (2017) examined the relationship between the clarity of annual reports and earnings management practices. Their findings reveal that companies that engage in earnings management to meet or surpass the previous year's earnings tend to produce more complex management discussions and analyses (MD&As). This contradicts the conventional pattern where readability typically increases with higher earnings levels, challenging the notion that positive news is inherently easier to convey. Instead, it suggests that intentional complexity is used to make disclosures more intricate. Besides, Asay, Libby, and Rennkamp (2018) conducted an experiment involving experienced managers to understand how reporting objectives and corporate performance affect language choice. They find that managers with a stronger inclination towards self-enhancement tend to make disclosures conveying negative news less comprehensible than those delivering positive news. This difference arises because managers make more reader-friendly reports when conveying positive news, rather than deliberately trying to obscure unfavorable performance. When presenting subpar results positively, they tend to emphasize future prospects and provide causal explanations for underperformance clearly.

Several recent studies have delved into the determinants of annual financial report quality and readability, shedding light on their significant impacts on financial reporting and decision-making. Arianpoor and Sahoo (2022) research focuses on the Tehran Stock Exchange (TSE) and highlights the positive and substantial influence of cost leadership and differentiation strategies, along with annual report readability, on financial reporting quality. Notably, higher levels of differentiation strategy and readability magnify their effects, providing insights for policymakers seeking to enhance report clarity in Iran. Chen, Hanlon, Khedmati, and Wake (2023) unveil a compelling connection between annual report readability and equity mispricing. Their findings indicate that less readable reports hinder efficient information absorption into stock prices, leading to more frequent instances of equity mispricing. Importantly, this effect was more pronounced when individual investors held substantial shares but was mitigated when seasoned financial analysts closely monitored a firm.

Dalwai, Chinnasamy, and Mohammadi (2021) investigate the importance of annual report readability in effective communication between firms and stakeholders, focusing on Oman's financial sector. They discover that reports that are easier to read, especially those that were graded using the Flesch reading ease formula, are linked to higher asset utilisation ratios and Tobin's Q. This shows that readability has a positive effect on firm performance and lowers agency costs. Li (2008) explores the relationship between annual report readability, firm performance, and earnings persistence. It reveals that companies with lower earnings management tend to produce less readable reports, potentially obscuring unfavorable information. Conversely, firms with easily readable reports exhibit more consistent positive earnings over time, underscoring the importance of transparent communication for investors. These studies collectively emphasize the critical role of report readability and strategic choices in shaping financial reporting quality and investor decision-making.

3. Method

3.1. Hypothesis

Earnings management can also lead to opacity and obfuscation within the annual report. Companies may strategically omit crucial details or use vague language to conceal their manipulative actions. This creates a paradox where, while the report may appear more readable on the surface, it becomes less informative and reliable, potentially misleading stakeholders. Furthermore, earnings management can erode trust in financial reporting, as stakeholders may become skeptical about the accuracy and integrity of the information presented. This skepticism can undermine the overall credibility of the annual report and hinder its effectiveness as a communication tool. According to the confusion theory, management intentionally uses complex disclosure techniques to conceal financial statements with the aim of concealing their true operating results (Lo et al., 2017).

Hypothesis: Earnings management has a positive impact on annual report readability.

3.2. Research Model

Based on the theory as well as the previous research models, the current research employs the model as follows:

$$Readability_{it} = \alpha_i + \beta EM_{it} + \delta Control\ Variables_{it} + \varepsilon_{it} \quad (1)$$

Where α_i is time-invariant unobserved variable (firm fixed effect), β is the beta coefficient of EM, δ is a coefficient vector, α_i is constant (firm fixed effect), and ε_{it} is the error term.

The variables in the model are described in detail in Table 1.

Table 1. Variables definitions.

Variable name	Content	Expected	Reference
Dependent variables: Annual report readability			
FOG	A proxy for readability calculated using Robert Gunning (Fog index)	Dependent variable	Lim et al. (2018) and Lo et al. (2017)
Independent variable: Earnings management			
EM	Earnings management calculated using Jones (1991)	+	Lo et al. (2017)
Control variables			
SIZE	Ln(Total asset)	+	
LEV	Leverage= liability or Total assets	-	
GROWTH	Revenue growth=(Revenue-revenue _{t-1})	+	
AGE	Ln(Number of years since the firm's incorporation)	+	
FDistress (Financial distress)	A proxy for financial distress using MacKie-Mason (1990)	+	

3.3. Variables Measurement

3.3.1. Annual Report Readability

There are various readability metrics for assessing the readability of reports (Loughran & McDonald, 2014). However, the Fog index is considered the most common in the field of finance in general (Loughran & McDonald, 2014). In this study, we also focus on evaluating the readability of reports using the Fog index. The FOG index, developed by Gunning (1952), is one of the most widely used proxies of annual report readability by many researchers (Biddle, Hilary, & Verdi, 2009; Lawrence, 2013; Lehavy, 2009; Lim et al., 2018; Lo et al., 2017; Yu & Miller, 2010). The higher the Fog index, the more difficult reading is. To calculate this index, the researchers calculated the average number of words appearing per sentence and the percentage of complex words in a document. Which complex words are defined as words with three or more syllables? A

Fog number of 14 or more is considered illegible, and one greater than 18 is considered illegible (Li, 2008; Lim et al., 2018). The FOG is calculated in the report as follows:

$$FOG = (\text{average number of words} + \text{complex words}) * 0.4$$

Accordingly, a lower fog index indicates that the report is easier to read, while a higher fog index suggests that the report is more difficult to read (Loughran & McDonald, 2014).

3.3.2. Earnings Management

Several earlier studies have estimated earnings manipulation using various accrual models; the three most popular models are the Jones (1991). All these models made an effort to separate net income's crucial element, discretionary accruals. To calculate net income (NI), add the cash flow from operations (CFO) and accruals (ACC). Then, accruals are separated into non-discretionary accruals (NDACC) and discretionary accruals (DACC). NDACC is connected to a company's operational and financial activities. The last possibility for managing earnings is represented by DACC, or discretionary accruals, which are said to indicate "abnormal accruals" produced by managers' discretionary accounting decisions.

$$NI = CFO + ACC$$

$$ACC = DACC + NDACC$$

The first econometric method to estimate discretionary accruals was the Jones (1991) model. There is no other accrual model that regularly beats the Jones model, despite the fact that it has some drawbacks. This well-known model presupposes that NDACC can be calculated using the Equation 2:

$$\frac{NDACC_{i,t}}{AT_{i,t-1}} = \hat{\alpha}_1 \left(\frac{1}{AT_{i,t-1}} \right) + \hat{\alpha}_2 \left(\frac{\Delta REV_{i,t}}{AT_{i,t-1}} \right) + \hat{\alpha}_3 \left(\frac{PPE_{i,t}}{AT_{i,t-1}} \right) \quad (2)$$

Where:

$NDACC_{i,t}$: Nondiscretionary accruals for firm i in year t .

$AT_{i,t-1}$: Total assets for firms i in year $t-1$.

$\Delta REV_{i,t}$: A change in revenues for firm i in year t .

$PPE_{i,t}$: Gross plant, property and equipment for firm i in year t .

$\hat{\alpha}_1, \hat{\alpha}_2, \hat{\alpha}_3$: Estimated parameters for firm i .

The parameters ($\alpha_1, \alpha_2, \alpha_3$) are estimated from the Equation 3 below:

$$\frac{ACC_{i,t}}{AT_{i,t-1}} = \alpha_1 \left(\frac{1}{AT_{i,t-1}} \right) + \alpha_2 \left(\frac{\Delta REV_{i,t}}{AT_{i,t-1}} \right) + \alpha_3 \left(\frac{PPE_{i,t}}{AT_{i,t-1}} \right) + \varepsilon_{i,t} \quad (3)$$

Where:

$ACC_{i,t}$: Represents total accruals for firm i , in year t

$\alpha_1, \alpha_2, \alpha_3$ are estimated and denoted as $\hat{\alpha}_1, \hat{\alpha}_2, \hat{\alpha}_3$ respectively.

$AT_{i,t-1}$: Total assets of firm i in period $t-1$ and this is used as a deflator to correct possible problems of heteroscedasticity.

$\varepsilon_{i,t}$ represents DACC for firm i , in year t .

3.3.3. Control Variables

The debt ratio to total assets can serve as a measure of leverage (Ajina et al., 2016; Nguyen, Ho, Nguyen, Pham, & Nguyen, 2021; Zéghal, Chtourou, & Sellami, 2011). The higher the debt ratio, the harder it is to present reports (Ajina et al., 2016). According to (Nguyen et al., 2021; Zéghal et al., 2011), the enterprise's total assets serve as a proxy for determining the firm's size.

The larger the firm, the more complex the reporting capabilities (Ajina et al., 2016; Hossain, Perera, & Rahman, 1995). The age of the enterprise is calculated based on the number of years of operation (from the year of establishment) to the calculation period. With enterprises operating for longer, there tends to be a larger volume of reports, making them more difficult to read (Li, 2008). MacKie-Mason (1990) calculated financial distress:

$$\text{Financial distress} = 3.3 \left(\frac{EBIT}{TA} \right) + 1.0 \left(\frac{\text{Revenue}}{TA} \right) + 1.4 \left(\frac{\text{Retained Earnings}}{TA} \right) + 1.2 \left(\frac{\text{Working capital}}{TA} \right)$$

3.4. Data Analysis

With data from 251 Singaporean domestic enterprises listed on SGX from 2016 to 2021, panel data is considered suitable for analysis. The study carried out panel data analysis. Basic models such as the fixed effects model (FEM) and random effects model (REM) can be used in panel data analysis. However, given that panel data potentially faces an issue of endogeneity, we employ the Difference Generalized Method of Moments (DGMM) model to address the potential endogenous problem. To elaborate, with panel data characterized by a limited T and the number of individuals $N > T$, the utilization of the DGMM model is a solution to tackle the issue of endogeneity.

The DGMM model eliminates the relationship between the residuals and the independent variables through the mechanism of differentiating the variables. The DGMM model is implemented as follows:

$$Y_{it} = (\beta_0 + v_i) + \beta_1 Y_{it-1} + \beta_2 X_{it} + \varepsilon_{it} \quad (4)$$

Equation 4 is transformed into first-difference form to suppress potential fixed effects assumed in panel data.

$$\Delta Y_{it} = \beta_1 \Delta Y_{it-1} + \beta_2 \Delta X_{it} + \Delta \varepsilon_{it}$$

$$v_{it} = v_i + \varepsilon_{it}$$

$$\Delta v_{it} = (v_i + \varepsilon_{it}) - (v_i + \varepsilon_{it-1}) = \Delta \varepsilon_{it}$$

Therefore, taking the difference will eliminate the endogeneity problem in the model. The tests for AR(1) and AR(2) regarding autocorrelation, as well as the Sargan test for instrumental variable validity, were employed in the DGMM in this study.

4. Results

4.1. Descriptive

The software STATA will be used to analyze the collected data. In the beginning, the writers evaluated the overview of the variables using descriptive statistics. According to the findings, the highest FOG variable is 12.2, and the smallest is 0.6, with a mean value of 4.7.

The maximum EM is 1.41, and the mean EM is 0.077. The maximum LEV is 6.45, and the mean LEV is 0.263. The mean AGE is 28. The mean measure of financial distress (Fdistress) is 0.917. Information is presented in Table 2.

Table 2. Descriptive statistics.

Variable	Obs.	Mean	Std. dev.	Min.	Max.
FOG	1530	4.797	3.309	0.6	12.2
EM	1495	0.077	0.104	0	1.413
LEV	1526	0.263	0.31	0	6.451
AGE	1530	28.265	19.64	0	134
SIZE	1529	19.845	1.737	11.249	24.796
Fdistress	1461	0.917	3.192	-40.444	13.322

4.2. Regressions

Results of analysis of the DGMM model show a p-value of AR (1) equal to 0.017, AR (2) is 0.905, and Sargan's test is 0.679, so the DGMM model is reliable for analysis. Furthermore, the results show that the EM positively impacts annual report readability (the higher EM, the more difficult it is to read the report with $\beta > 0$ and significance at 1%). Details are in Table 3.

Continue to evaluate when the company is in Financial Distress and Non-Financial Disruption. Again, the results show that EM has the same effect on the report's readability (the higher the EM, the harder the report is to read).

Table 3. The regression results.

Variables	All of company	Financial distress	Non-financial distress
	FOG	FOG	FOG
FOG _{t-1}	0.163 (0.367)	-0.262 (0.228)	-0.199 (0.137)
EM	239.0*** (81.97)	177.4*** (45.06)	69.05*** (26.71)
LEV	116.3* (61.33)	0.346 (33.93)	24.23*** (8.260)
AGE	-0.713 (0.708)	1.372** (0.547)	-0.232* (0.132)
SIZE	12.54 (7.712)	-2.705 (6.615)	9.111*** (2.703)
Constant	-273.8* (160.6)	7.240 (128.7)	-184.1*** (57.34)
Observations	1,247	665	582
Number of groups	251	172	152
AR(1)	0.017		
AR(2)	0.905		
Sargan test	0.679		

Note: Standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 4. The regression with different company characteristics.

Variables	Beta	P-value	Conclusion
Financial distress	117.4	0.000	Significant
Non-financial distress	69.05	0.000	Significant
Lower profit	112.17	0.001	Significant
Higher profit	119.48	0.002	Significant
Lower firm size	136.91	0.000	Significant
Higher firm size	133.98	0.000	Significant
Younger firm	52.82	0.000	Significant
Older firm	103.77	0.000	Significant

In addition, the study also analyses enterprises with different profits, different sizes, and different years of establishment. The results show that EM positively affects the report's readability (beta coefficients are both positive and statistically significant at 1%). Details are in Table 4. This result also shows the robustness of the model when different company characteristics have the same impact on the report's readability.

4.3. Discussions

EM has a positive effect on FOG, indicating that the higher the degree of earnings management, the harder it is for annual reports to read and understand. This result confirms and reinforces the findings about a significant association between earnings management and reporting disclosure (Li, 2008; Lo et al., 2017). Intuitively, earnings management would incentivize managers of a company to build complicated and difficult-to-read reports to conceal unfavorable information about the company, certainly the earnings management itself (Kim, Kim, & Zhou, 2017; Lo et al., 2017). Companies may employ complex methods in financial reporting to make the data appear vague and challenging to analyze the company's financial and overall performance. This could involve using unclear items, intricate accounting rules, or arranging information illogically (Asay et al., 2018). As a result, reader of the annual report may find it difficult to gain a clear understanding of the company's actual financial situation. Therefore, the level of difficulty in reading annual reports, or equivalently, the complexity and ambiguity of the reports, can be considered a signal or hint to help investors, stakeholders, analysts, and the public in general gain insights into the company's earnings management level and further into the financial as well as overall performance of the company, and potentially triggering a deeper analysis of the company.

The regression results also show that LEV has a negative effect on the difficulty of reading companies' annual reports. This result shows that the more dimensional the use of debt a company adopts, the harder the company's reports are to read. In other words, companies do not want to show debt-related items. Therefore, information about larger debt will be a bad signal for investors when the company's financial capacity is not good. In addition, there is a difference in the impact of AGE on report readability; specifically, AGE has a positive effect on the difficulty of reading reports in businesses with financial distress, but AGE has a negative effect on the difficulty of reading enterprises with non-financial distress. This result shows that companies that have been in operation for a long time and are in financial distress tend to develop reports that are difficult to read. In contrast, businesses operating for many years but in non-financial distress tend to build reports that are easier to read. This study also finds that SIZE only positively affects report readability in non-financial distress firms; the results show that the larger the firm size, the harder the report is to read, but only for non-financial distress firms.

5. Conclusions and Implications

5.1. Conclusions

This study examines the relationship between EM and the readability of the annual reports of Singaporean companies listed on SGX. The authors have investigated the theoretical basis related to the readability of reports and the EM of companies. For empirical analysis, Jones (1991) calculated and measured EM, while the FOG Index measures report readability. The results of the data analysis show that Singaporean companies with higher levels of EM tend to produce more difficult-to-read annual reports compared to those with a lower EM level. Intuitively, companies tend to create difficult-to-read reports to hide adverse information, especially the earnings management itself, in the companies' reports. In addition, the research also finds no difference between financial distress and non-financial distress firms in terms of the impact of EM on the report's readability. Given the results of this study, one can draw a number of implications.

5.2. Theoretical Implications

Theoretically, this research provides further evidence for the existence of a relationship between earnings management and annual report readability with credible data from Singaporean companies listed on the Singapore Stock Exchange (SGX). As an advanced country, Singapore is expected to adopt and maintain high standards of corporate disclosure and reporting, especially for the listed companies in the SGX; likewise, the macroeconomic standards, such as those related to the business environment, competitiveness, and specifically

those related to transparency and disclosure, etc., are also expected to be high. As such, the overall condition is favorable for a reliable analysis of the relationship between earnings management and annual report readability. Hence, the findings in this paper are reliable to reinforce the set of generic findings that earnings management can undermine the ease of reading and understanding reports, or equivalently, that companies with higher EM tend to generate reports that are more difficult to read and vice versa.

5.3. Practical Implications

In practical terms, the study makes an important contribution to providing further and reliable evidence for indication and hint about companies' corporate earnings management (EM) manipulation through the level with which annual reports are easy or difficult to read. The harder it is to read annual reports, the more likely a company is to conduct a higher level of earnings management. This provides stakeholders and investors with a signal to understand the possibility of a company conducting earnings management and further a closer look at the company's financial performance. This is significant as earnings management can lead to a lack of trust from investors and the financial community. Our findings provide additional and credible evidence for report readers (investors, other stakeholders, and the public in general) so that whenever the readers detect complexity in a company's reports and hence ambiguity and uncertainty in the information, it is reasonable to become especially vigilant and cautious when evaluating the company's performance and investment potential. In the event that a company's reports are harder to read, the confidence of potential investors in general can erode, resulting in a reduction in the market value of the company.

6. Limitations and Future Research

Although the study has achieved the research objective by showing the positive impact of earnings management on the level of difficulty of reading an annual report, there remain some limitations and hence potential directions for future research. First, in addition to the FOG index and EM index based on Jones (1991), one can explore other potential measures of readability and EM in future research. Second, the research conducted for Singaporean companies listed on the Singapore Stock Exchange in this paper can be extended to other markets, especially those in East Asia. Third, the current research can be extended to include foreign companies listed on SGX; that can open the possibility for a meaningful comparison between the cohorts of companies.

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