

Firm Size, Firm Age and the Readability of the MD&A Report

Tubagus Algan Roiston^a, Iman Harymawan^{b*}, ^{a,b}Department of Accountancy, Faculty of Economics and Business, Universitas Airlangga, Email: ^{b*}harymawan.iman@feb.unair.ac.id

The purpose of this study is to find out the effect of firm size and firm age on the management discussion and analysis (MD&A) report readability of companies in developing countries. This study uses a sample of 568 observations from 550 listed firms on the Indonesia Stock Exchange from 2014 to 2016 to examine how the firm size and firm age affect the MD&A report readability of companies. This study found that the larger the size and the older the age of a firm, the higher its MD&A report readability score. For investors or stakeholders, the results of this study indicate that firm size and firm age can affect the readability of MD&A report, so that investors or stakeholders can analyse fraudulent financial reporting carried out by managers or bad news hidden by the manager. Therefore, they can determine whether they should invest in the firm or not. This kind of study is still rarely done in companies in developing countries, so it can be used as a comparison of the openness level of a manager in conveying information in financial reports between developing and developed countries.

Key words: *Readability, SMOG Index, FLEACH Grade Level, firm size, firm age.*

Introduction

Research in finance and accounting that examines the relevance of values and quantitative information has contributed greatly to society. One of these contributions is to provide understanding about the structure and characteristics of financial markets to the public, and to increase public awareness that the information conveyed by quantitative factors alone is not enough to explain the shifts of stock price and the fundamental conditions of a firm.

Studies by Smith (1998) and Smith and Taffler (1995) revealed that the narrative content of managers can provide useful information to distinguish between failed and healthy

companies. Meanwhile, Kaplan, Pourciau and Reckers (1990) showed that the manager's narrative has an impact on the individual's assessment of stock prices. Deegan and Gordon (1996) stated this is very important, because traditionally this accounting narrative is not audited. Therefore, there is a potential scope for managers to control and manipulate impressions to users of accounting information. Management may try to manage their narratives just as they manage other features of annual reports, such as revenues (Schipper, 1989).

Lo, Ramos, and Rogo (2017) stated that nearly 80% of management disclosures were represented in narrative texts on the company's annual report. Therefore, there is a possibility that management provides disclosures that are difficult to understand and complex in order to hide poor performance or to manipulate the investors or stakeholders. Annual reports made by public companies are the main channels that allow investors and information intermediaries to obtain specific information about the company (Li, 2008; Lehavy, Li, & Merkley, 2011; Biddle, Hilary, & Verdi, 2009; Kim, Wang, & Zhang, 2015). The readability of the annual report is very important in terms of how effectively companies can communicate their relevant valuation and information to users. As an important source of risk information for its users, an annual report with low readability is related to lack of productivity, low investment efficiency, and high risk of stock prices.

On the other hand, managers are also required to keep developing the company's business, which is a task that needs large funds to accomplish. These large funds will not be easily obtained by relying solely on profits generated from the company's business processes. Managers are forced to find more funding resources quickly, that provide large amounts of money that usually come from external parties. There are two ways for managers to get a large sum of funds: through the capital market and the financial contracts with creditors or banks. However, it is not as easy as imagined since these parties require several terms and conditions so the company can obtain funding from them. If a company wants to go public in the Indonesian Stock Exchange, one of the conditions to be fulfilled is the company must have net tangible assets above 5 billion. Then, if a company wants to easily win financial contracts from creditors or banks, it must provide its assets as collateral to proceed. Things like this sometimes cannot be fulfilled by the companies due to some limitations, which later motivate their management to manipulate the size of company assets. There are two possibilities that increase a company's assets: management manipulation and the length of time the company has invested so it can develop the business. Due to the large firm size, management often meet difficulties with disclosing their annual report since there are a lot of things and events that must be delivered, which then makes them reduce the annual report readability to make stakeholders clueless about the true events. In line with what was revealed by Bloomfield (2008), there are two very credible reasons that explain the

relationship between the readability of the annual report and firm performance and firm size. First, managers try to hide bad news or use manipulation by writing text that is difficult to understand. Second, there is the ontological reality that bad news is indeed difficult to express.

This study was conducted on listed companies at Indonesia Stock Exchange (IDX), within 2014-2016, with a total of 568 companies after being excluded from SIC 6. The research data was obtained from ORBIS and IDX in the form of annual reports. Data processing was carried out through STATA 14 using ordinary least square (OLS) regression after previously being given heteroscedasticity deterrent and winsorize treatment to ensure the regression results are a best linear unbiased estimate (BLUE).

Literature Review and Hypothesis Development

Many studies on accounting use firm size to measure company performance (Harymawan & Nowland, 2016). In this study, firm size is used to measure the annual report readability where the larger the size of the company, the more complex disclosures it will present, because it has a more complex process. A larger firm will have more complicated operations and will provide more difficult words on the annual reports (Li, 2008; Ajina, Laouiti, & Msolli, 2016; Lo, Ramos, & Rogo, 2017). In this study, the authors expected that when the company has a large firm size, the management has difficulty conveying its business process so the annual report becomes difficult to understand. Consequently, the first hypothesis formulated in this study is:

H1: Firm size has a positive effect on the readability of annual report.

However, prior research by Li (2008), stated that older companies tend to have annual reports that are easier to understand, because of the lack of information asymmetry caused by investors who are very familiar with the company's business processes. This study also expects the same thing; that is, when the company is older, its annual report will be easier to understand as it has more experience in managing resources, so conveying information will be easier. However, this study tries to take things one step further by correlating firm size and firm age with the annual report readability. Companies that are larger and older will have a low readability level, meaning the annual report will be more difficult to understand. This might happen because a company with a large size and older firm age is the result of manipulation from an increasingly experienced management, so the company has sufficient skills in managing the contents of the annual report so that company performance looks good or has more business complexity. Hence, the second hypothesis is:

H2: Companies with the increasing firm size and firm age have a low level of annual report readability.

Data and Variable Measurement

Sample and Source of Data

This study used 568 companies from various industrial sectors, except those with SIC 6 codes, namely the financial, banking and real estate sectors which were listed on the Indonesia Stock Exchange (IDX) for the 2014-2016 period. Data were obtained from two sources, ORBIS and IDX. Data acquired through ORBIS included several control variables and independent variables, such as total assets and incorporate dates, while the data obtained through IDX (Indonesia Stock Exchange) included annual reports specifically in the MD&A (Management Discussion and Analysis) section, where the authors could see the readability of management disclosure towards the company's future and performance. From ORBIS alone, the authors obtained 2220 samples of companies within 2014-2016 as references to collect data manually from annual reports which will later be used for computing the readability index of the MD&A sections of the annual report using readability application software. Then both the data from ORBIS and manually collected data were combined in STATA, after changing the data format to numeric and panel data. After that, STATA performed the elimination process based on data incompleteness and left 568 samples for regression.

Independent Variables

This study examines two independent variables, namely firm size and firm age. Firm size is measured by the natural logarithm of total assets which shows the size of a company (Nasih, Harymawan, Paramitasari, & Handayani, 2019). The firm age is the natural logarithm of how long the company has existed, that was calculated by subtracting the year of observation by the company's incorporated date.

Dependent Variable

The dependent variable in this study was the readability index, which used two types of indexes, which are Flesch-Kincaid Grade Level and the SMOG (Simple Measure of Gobbledygook) index. Flesch-Kincaid Grade Level and SMOG (Simple Measure of Gobbledygook) index can be calculated with the formulas stated below:

$$\text{Flesch-Kincaid Grade Level}_{\text{score}} = 0,39 \left(\frac{\text{total words}}{\text{total sentences}} \right) + 11,8 \left(\frac{\text{total syllables}}{\text{total words}} \right) - 15,59$$

$$\text{SMOG (Simple Measure of Gobbledygook) index / score} = 1,043 \sqrt{30 \times \frac{\text{polysyllabic words}}{\text{total sentences}}} - 3,1291$$

Table 1: Readability Level

Formal Education	Score of readability	Interpretation
Master graduate	24-28	Very difficult
Undergraduate	19-23	Difficult
Grade 10-12	17-18	Quite difficult
Grade 8-9	15-16	Standard
Grade 7	14	Quite easy
Grade 6	13	Easy
Grade 5	12	Very Easy

Control Variables

This study uses several control variables, namely EQ (earning quality) which was calculated by using the performance matched discretionary accrual (Kothari, Leone, & Wasley, 2005), where the total value of discretionary accrual is an absolute value multiplied by -1, because earning quality is the opposite of earnings management and earnings quality is an accounting profit that can reflect the actual financial performance of a company (Harymawan & Nurillah, 2017). PROFIT (profitability) was computed by dividing operating profit by the total assets. LOSS (loss) was calculated by a dummy variable given a value of 1 if the profit was positive, and a value of 0 if otherwise. LEV (leverage) was calculated by deflated total debt to total assets.

Empirical Analysis

Descriptive Statistics

The various variables used in this study are more specifically explained in the appendix section. Table 2 illustrates the sample distribution in this study, where the largest distribution is in SIC 2 (manufacturing companies), which consists of 157 companies that formed the largest data population of 27.64% of the 568 sample companies studied. This is because the manufacturing sector contributes the most to Indonesia's economic growth, thus forming the largest sample population in this study.

Table 2: Sample Distribution Based on Primary Industry Classification Code

SIC	Industry	Year			Total
		2014	2015	2016	
0	Agriculture, Forestry, and Fisheries	10	11	9	30 (5.28%)
1	Mining and Constructions Industries	29	26	32	87 (15.32%)
2	Manufacturing (1)	49	53	55	157 (27.64%)
3	Manufacturing (2)	24	24	26	74 (13.03%)
4	Transportation, Communication, and Utilities	36	36	37	109 (19.19%)
5	Wholesale and Retail	13	11	13	37 (6.51%)
7	Service Industries (1)	19	18	19	56 (9.86%)
8	Service Industries (2)	6	5	7	18 (3.17%)
Tota 1		186	184	198	568
		32.75%	32.3 9%	34.8 6%	100%

Table 3 shows the descriptive statistics. FLEACH grade level has a mean of 21,986. The SMOG index had a mean value of 20,181 indicating that the average annual reports of companies on the Indonesia Stock Exchange have low readability. FSIZE, which is a natural logarithm of total assets, had a mean of 484,906. FAGE as a natural logarithm of the age of a company had a mean of 3.223. The average of the EQ was -0.090, while the average PROFIT was 0.060 and average LOSS was 0.173. LEV had a mean of 0.547.

Table 3: Descriptive Statistics

	Mean	Median	Standard Deviation	Minimum	Maximum
FLEACHGradeLevel	21.986	22.113	1.694	13.143	27.364
SMOGIndex	20.181	20.243	1.668	12.564	25.547
FSIZE	484.906	481.189	67.351	326.246	637.216
FAGE	3.223	3.296	0.593	1.609	4.654
EQ	-0.090	-0.056	0.107	-0.706	-0.001
PROFIT	0.060	0.057	0.084	-0.226	0.398
LOSS	0.173	0.000	0.378	0.000	1.000
LEV	0.547	0.522	0.320	0.080	3.713

Table 4 describes the average of the readability index from each industrial sector industry where all examined sectors have a high readability score, which means that their annual reports are difficult to understand. Of all the observed sectors, SIC 8 reports were the most difficult to read and understand, where the FLEACH grade level had an average value of 23.09522 and the SMOG Index had an average value of 21.03201. The SIC 8 sector involves the service industry which has a low level of readability (difficult to understand), because services is not absolute since the cost of services – that is, whether a service will be cheap or expensive - is determined by the company or depends on consumer demands, so there is a possibility that management will manipulate it.

Table 4: The Mean Readability of Each Sector of Industry

SIC	MEAN	
	FLEACHGrade	SMOGIndex
0	21.29184	19.69699
1	22.34833	20.5622
2	21.36622	19.60068
3	22.12224	20.38149
4	22.48109	20.62305
5	21.98222	20.09959
7	22.03019	20.13366
8	23.09522	21.03201

Pearson Correlation Analysis

A Pearson Correlation Analysis was used to see the correlation level and the relationship direction of each variable. In the correlation test (Table 5), FSIZE and FLEACH Grade Level, the SMOG index had a significant positive correlation which indicates that firm size

has a strong relationship with the readability level. The larger the size of the company (firm size), the more difficult it will be to read the annual report. Meanwhile, FAGE and FLEACH grade levels, the SMOG index had a non-significant negative relationship. At the same time, EQ (Earning quality) had a significant positive relationship with the FLEACH grade level and the SMOG variable; this means the better the earning quality, the more difficult the annual report will be to read. This could possibly happen, because while management are getting smarter in managing the quality of their profits, they are also smarter in hiding the information manipulation. As we can see in Table 6, FSIZE_FAGE had a significant positive relationship with the FLEACH grade Level and the SMOG index, which indicates that the bigger the firm size and the older the firm age, the lower the readability level of the report, so it is more difficult to understand the contents of the annual report.

Table 5: Pearson Correlation Analysis of Firm Size and Readability

	FLEACH Grade Level	SMOG Index	FSIZE	FAGE	EQ	PROFIT	LOSS	LEV
FLEACH Grade Level	1.000							
SMOG Index	0.961*** (0.000)	1.000						
FSIZE	0.148*** (0.000)	0.165*** (0.000)	1.000					
FAGE	-0.038 (0.371)	-0.049 (0.248)	0.053 (0.205)	1.000				
EQ	0.137*** (0.001)	0.111*** (0.008)	0.219*** (0.000)	0.081* (0.053)	1.000			
PROFIT	0.026 (0.535)	0.008 (0.844)	0.032 (0.448)	0.003 (0.941)	0.022 (0.596)	1.000		
LOSS	0.012 (0.771)	0.041 (0.326)	-0.055 (0.189)	-0.130*** (0.002)	-0.037 (0.378)	-0.625*** (0.000)	1.000	
LEV	-0.102** (0.015)	-0.062 (0.139)	0.065 (0.119)	0.067 (0.110)	-0.070* (0.096)	-0.181*** (0.000)	0.148*** (0.000)	1.000

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Pearson Correlation Analysis of the Interaction of Firm Size and Firm Age with Readability

	FLEACHGradeLevel	SMOGIndex	FSIZE_FAGE	FSIZE	FAGE	EQ	PROFIT	LOSS	LEV
FLEACHGradeLevel	1.000								
SMOGIndex	0.961*** (0.000)	1.000							
FSIZE_FAGE	0.153*** (0.000)	0.170*** (0.000)	1.000						
FSIZE	0.148*** (0.000)	0.165*** (0.000)	0.999*** (0.000)	1.000					
FAGE	0.023 (0.582)	0.028 (0.499)	-0.078* (0.063)	-0.084** (0.045)	1.000				
EQ	0.137*** (0.001)	0.111*** (0.008)	0.220*** (0.000)	0.219*** (0.000)	-0.088** (0.036)	1.000			
PROFIT	0.026 (0.535)	0.008 (0.844)	0.030 (0.482)	0.032 (0.448)	-0.002 (0.960)	0.022 (0.596)	1.000		
LOSS	0.012 (0.771)	0.041 (0.326)	-0.056 (0.185)	-0.055 (0.189)	0.139*** (0.001)	-0.037 (0.378)	-0.625*** (0.000)	1.000	
LEV	-0.102** (0.015)	-0.062 (0.139)	0.052 (0.215)	0.065 (0.119)	-0.083** (0.048)	-0.070* (0.096)	-0.181*** (0.000)	0.148*** (0.000)	1.000

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Main Analysis: Ordinary Least Square (OLS)

Firm Size and Readability

The first thing tested by researchers is the regression results of firm size which had a positive effect on the annual report readability. The following is the regression equation used as the research model:

$$(H1) \text{ Readability} = \beta_0 + \beta_1 \text{ Firm size} + \sum \beta_1 \text{ Control } j + \varepsilon$$

Table 7: OLS Regression: Firm size and Readability

	Prediction Sign	FLEACHGradeLevel	SMOGIndex
FSIZE	+	0.003***	0.003***
		(2.71)	(3.26)
FAGE	-	-6.553	-3.711
		(-0.82)	(-0.45)
EQ	?	1.587*	1.187
		(1.72)	(1.53)
PROFIT	-	0.152	0.294
		(0.13)	(0.26)
LOSS	+	0.071	0.219
		(0.31)	(0.95)
LEV	-	-0.505	-0.344
		(-1.44)	(-1.40)
Constant	?	70.144	46.600
		(1.16)	(0.75)
Industry Dummy		Yes	Yes
Year Dummy		Yes	Yes
R ²		0.123	0.108
N		568	568

t statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

In Table 7, FSIZE has a significant positive relationship with FLEACH grade level with a significant level of 1% and constant at 0.003 (t-value 2.71), and also has a significant positive relationship with the SMOG index with a significant level of 1% with and constant at 0.003 (t-value 3.26). It shows that the greater the size of the company (firm size), the lower the readability of the annual report (the more difficult it is to understand). The value of r-squared shows that the relationship between FSIZE variable and FLEACH grade level can be explained by 12.3% of the 568 samples, and the relationship between FSIZE variable and the SMOG index can be explained by 10.8% out of the 568 samples.

Firm Size and Firm Age on Readability

The second hypothesis tested by researchers is the regression results of firm size and firm age interactions that had a positive effect on the annual report readability. The following is the regression equation used as the research model:

$$(H2) \text{ Readability} = \beta_0 + \beta_1 \text{Firm size_firm age} + \sum \beta_1 \text{Control}_j + \varepsilon$$

Table 8: OLS Regression: Firm Size and Firm Age on Readability

	Prediction Sign	FLEACHGradeLevel	SMOGIndex
FSIZE_FAGE	?	0.007*	0.007**
		(1.89)	(2.32)
FSIZE	+	-0.053*	-0.051**
		(-1.81)	(-2.18)
FAGE	-	-9.756	-6.793
		(-1.24)	(-0.83)
EQ	?	1.545*	1.147
		(1.65)	(1.47)
PROFIT	+	0.463	0.594
		(0.41)	(0.56)
LOSS	-	0.106	0.252
		(0.47)	(1.09)
LEV	-	-0.349	-0.194
		(-0.86)	(-0.77)
Constant	?	94.730	70.267
		(1.59)	(1.13)
Industry Dummy		Yes	Yes
Year Dummy		Yes	Yes
R ²		0.133	0.117
N		568	568

t statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

In Table 8, FSIZE_FAGE has a significant positive relationship with FLEACH grade level with a significant level of 10% and a constant value of 0.007 (t-value 1.89), and it also has a significant level of 5% with a constant value of 0.007 (t-value 2.32) with SMOG index. This shows that the interaction between firm size and age makes the company's annual report more difficult to understand. In this regression, the relationship between FSIZE_FAGE and FLEACH grade level can be explained for 13.3% from 568 samples, while in FSIZE_FAGE and SMOG index it can be explained for 11.7% out of 568 samples.

Additional statistics

Before carrying out the descriptive statistics, two additional commands were conducted, which were the heteroskedasticity deterrent and winsorizing. They were conducted to prevent problems in the classic assumption test that might arise in the data, so that the regression results became biased. Heteroskedasticity deterrent was performed on STATA to overcome

any heteroskedasticity problems that might occur in the data. Initially, the ticker was changed into a numerical order and then added with a value of 10,000 (ten thousand) and the current year (Petersen, 2009). Then a "(cluster id2)" command was added at the end of each ordinary least square regression. Therefore, it can be assumed that each year with the same company still has different values.

Conclusion

The results of this study revealed a significant positive relationship between firm size and the readability of the company's MD&A report. The larger the size of the company (firm size), the lower the level of readability its annual report has. This indicates that when the size of the company is getting bigger, the possibility that the company has difficulty disclosing its resources also gets bigger, so the words conveyed by management in the annual report are getting more extensive and complex and make the MD&A report more difficult to understand. This is in line with previous research (Li, 2008; Ajina et al., 2016; Lo, Ramos, & Rogo, 2017).

The interaction between firm size and firm age has a significant positive relationship with the readability of the company's MD&A report. This means that the larger the size of the company (firm size) and the older the company (firm age), the more difficult it is to understand the company's MD&A report. This might happen because a large company has management who are highly experienced in recognising the profiles of their investors and hence can manipulate the report. Alternatively, it could be because the management has its own skills to deceive and disguise bad news or poor performance of the company, or the company has more complex business so they find it difficult to report it. This agrees with Guay, Samuels, and Taylor (2016) who found that financial statement complexity came about due to the complexity of the firm's business transactions ("business complexity") or the complexity of associated reporting standards ("reporting complexity"), and regardless of whether it is "normal" or "abnormal." The overall results of this research are in line with Hancock et al. (2016), where it is easier to tell the truth than a lie, because using lies to convince communicators is difficult, since the events that occurred should be consistent with the facts.

REFERENCES

- Ajina, A., Laouiti, M., & Msolli, B. (2016). Guiding through the Fog: Does annual report readability reveal earnings management? *Research in International Business and Finance*, 38, 509–516. <https://doi.org/10.1016/j.ribaf.2016.07.021>
- Biddle, G. C., Hilary, G., & Verdi, R. S. (2009). How Does Financial Reporting Quality Relate to Investment Efficiency? How Does Financial Reporting Quality Relate to Investment Efficiency? Abstract: Prior evidence that higher quality financial reporting improves capital investment efficiency.
- Deegan, C., & Gordon, B. (1996). A study of the environmental disclosure practices of Australian corporations. *Accounting and Business Research*, 26(3), 187–199. <https://doi.org/10.1080/00014788.1996.9729510>
- Guay, W., Samuels, D., & Taylor, D. (2016). Guiding through the Fog: Financial statement complexity and voluntary disclosure. *Journal of Accounting and Economics*, 62(2–3), 234–269. <https://doi.org/10.1016/j.jacceco.2016.09.001>
- Hancock, J. T., Curry, L. E., Goorha, S., Woodworth, M., Hancock, J. T., Curry, L. E., ... Woodworth, M. (2016). On Lying and Being Lied To: A Linguistic Analysis of Deception in Computer-Mediated Communication On Lying and Being Lied To: A Linguistic Analysis of Deception in Computer-Mediated Communication, 6950(March), 37–41. <https://doi.org/10.1080/01638530701739181>
- Harymawan, I., & Nowland, J. (2016). Political connections and earnings quality How do connected firms respond to changes. *International Journal of Accounting & Information Management*. <https://doi.org/10.1108/IJAIM-05-2016-0056>
- Harymawan, I., & Nurillah, D. (2017). Do Reputable Companies Produce a High Quality of Financial Statements? *Asian Journal of Accounting Research*, 2(2), 1–7. <https://doi.org/10.1108/ajar-2017-02-02-b001>
- Kaplan, S.E., Pourciau, S. and Reckers, P. M. J. (1990). An examination of the effect of the President's Letter and Stock Advisory Service information on financial decisions. *Behavioral Research in Accounting*, Vol. 2, 63–92.
- Kim, C. (Francis, Wang, K., & Zhang, L. (2015). The Readability of 10-K Reports and Stock Price Crash Risk. *SSRN Electronic Journal*.



- Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Finance*, 39, 163–197. <https://doi.org/10.1016/j.jacceco.2004.11.002>
- Lehavy, R., Li, F., & Merkley, K. (2011). The effect of annual report readability on analyst following and the properties of their earnings forecasts. *Accounting Review*, 86(3), 1087–1115. <https://doi.org/10.2308/accr.00000043>
- Li, F. (2008). Annual report readability, current earnings, and earnings persistence. *Journal of Accounting and Finance*, 45, 221–247. <https://doi.org/10.1016/j.jacceco.2008.02.003>
- Lo, K., Ramos, F., & Rogo, R. (2017a). Earnings management and annual report readability. *Journal of Accounting and Economics*, 63(1), 1–25. <https://doi.org/10.1016/j.jacceco.2016.09.002>
- Lo, K., Ramos, F., & Rogo, R. (2017b). Earnings management and annual report readability. *Journal of Accounting and Economics*, 63(1), 1–25. <https://doi.org/10.1016/j.jacceco.2016.09.002>
- Nasih, M., Harymawan, I., Paramitasari, Y. I., & Handayani, A. (2019). Carbon emissions, firm size, and corporate governance structure: Evidence from the mining and agricultural industries in Indonesia. *Sustainability (Switzerland)*, 11(9). <https://doi.org/10.3390/su11092483>
- Robert Bloomfield. (2008). Discussion of “Annual report readability , current earnings , and earnings persistence” 45, 248–252. <https://doi.org/10.1016/j.jacceco.2008.02.003>
- Schipper, K. (1989). Commentary on earnings management. *Accounting Horizons*, 91–102.
- Smith, M. and Taffler, R. J. (1995). The incremental effect of narrative accounting information in corporate annual reports. *Journal of Business Finance and Accounting*, Vol. 22 No, 1195–210.
- Smith, M. (1998). “Conflicting messages in annual reports”, *Accountability and Performance.*,” Vol. 4 No., 43–60.

Appendix

Table A1: Variables Definition

Variables	Measurements	Sources
FSIZE	natural logarithm of total assets	ORBIS
FAGE	natural logarithm of firm age	ORBIS
FLEACH grade level	$FLEACH \text{ grade level } /score = 0,39 \left(\frac{total \ words}{total \ sentences} \right) + 11,8 \left(\frac{total \ syllables}{total \ words} \right) - 15,59$	MD&A of annual report
SMOG Index	$SMOG \text{ index } /score = 1,043 \sqrt{30 \times \frac{polysyllabic \ words}{total \ sentences}} - 3,1291$	MD&A of annual report
EQ	performance matched discretionary accrual model by Kothari et al. (2005). where the value of discretionary accrual is an absolute value multiplied by -1	ORBIS
PROFIT	operating profit divided by total assets	ORBIS
LOSS	dummy variable coded 1 if it has positive profit, 0 for otherwise.	ORBIS
LEV (LEVERAGE)	total debts divided by total assets	ORBIS