The Costs and Benefits of Reducing Complex Disclosures

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Abstract Purpose: Reducing annual report disclosure complexity has been a topic of serious debate for standard setters in recent years. In response to that, this study seeks to explore the effect of reducing such complexity on ERC, agency costs, proprietary costs, as well as interest rates on loans given by banks. Methodology: Based on listed companies in Indonesia for the year 2016, required data is collected through the IDX website. All empirical results in this study are obtained through the IBM SPSS Statistics software version 23 using the linear regression function for each hypothesis. Findings: The overall empirical results show that: 1) ERC and proprietary cost is not significantly affected by fog index, suggesting a less effective capital market in Indonesia, where information is not immediately processed in the market; 2) Agency costs are inversely related to disclosure complexity, suggesting that firms producing simpler reports are either mostly involved in tax planning, or larger Indonesian firms with lower fog usually bear higher monitoring costs; and 3) Interest rates on loans given by banks are greatly affected by disclosure complexity. Firms with more complex reports tend to get lower rates on bank loans as compared to those with much more readable reports, suggesting that providing debtholders with more complex information actually reassure them to offer lower rates. Originality: This paper is the first to explore the costs and benefits of reducing disclosure complexity in Indonesia.

Keywords: agency cost, annual report readability, complex disclosure, earnings response coefficient, IDX, Indonesia, interest rates, proprietary cost


1. Introduction

With the increasing level of accounting standards complexity and higher demands from financial report users for more information, disclosure readability has been a subject of interest in recent years for regulators, standard setters as well as accounting researchers. Standard setters and regulators such as the Financial Accounting Standards Board (FASB), the International Accounting Standards Board (IASB) and the U.S. Securities and Exchange Commission (SEC) all have ongoing projects related to reducing disclosure complexity. The U.S. SEC Chair, Mary Jo White, in a Leadership Conference [1], claimed that when information conveyed in reports gets too much, it could lead to what is known as ‘information overload’ - a phenomenon where disclosure becomes ineffective due to too much irrelevant information. This study uses companies’ annual reports as the basis of measuring disclosure complexity because it offers the most disclosure on the events that best describe a company’s financial and operational conditions. Since these reports are mostly narratives, the clarity of the reports’ disclosures is crucial in helping the users understand and interpret the conditions of the company. The main concern today is that users are more likely to jump directly into the figures. Most people find disclosures complex and ambiguous [2], and therefore fail to serve as a useful source of information for decision-making.

Several studies have been trying to analyze the factors affecting complexity, in which most of them relates to earnings quality. Prior researches have shown that companies with complex annual report disclosures purposely use hard-to-understand words in order to obfuscate bad performance [3,4,5,6,7]. For instance, Li [5] examine the implication of disclosure readability and earnings quality measured by earnings persistence and find a significant positive relation between the two. Lo et al. [3] find that firms engaged in earnings management are more likely to disclose complex reports. Based on Bloomfield’s [6] discussion of Li [5], there are two most prominent factors affecting the complexity of disclosures. First is obfuscation - which has been mentioned earlier - and second is ontology - that is bad news are, by nature, harder to disclose. This in fact contradicts the main purpose of disclosure - that is to provide decision-useful and understandable information for end-users, as well as reducing information asymmetry between owners-managers, managers-outsiders, investors-investors as well as government-managers.

Based on companies listed on the Indonesian Stock Exchange (IDX), this study attempts to investigate not the factors affecting complex disclosures, rather the costs and benefits of reducing such complexity. The focus of this study extends to the relation between disclosure complexity and the investors’ responsiveness toward earnings as proxied by the earnings response coefficient (ERC). The so-called “bottom line” is commonly believed to be the most useful information available for investors
2. Hypotheses Development

Fundamental to agency theory is that information asymmetries exist between the preparers and users of financial statements [4,20,21]. Conflict of interests between the different parties give rise to the agency problem, and therefore annual report aims at serving as information intermediary between firm’s management and end-users.

The question is whether or not information disclosed in the report is sufficient and effective in helping users make decisions. As information intermediaries, disclosures are expected to provide decision-useful information for users in order to reduce agency problems, hence the agency costs. However, prior researches have shown that many a times firms publish complex disclosures to obfuscate their actual performance [3,4,5,6,7]. For instance, Li [5] finds that firms with poor performance and less-persistent earnings provide disclosures that are more difficult to read. The act of making reports more unreadable or complex is in no way helpful for users such as investors. Of all the information available to investors during the year, net income is believed to capture the most information required for investment decision-making [8]. Kothari [22] claims that when the variability of stock price changes around the earnings announcement date, it can then be concluded that information disclosed in such announcement conveys new information that allows the market to reevaluate its expectations, assuming that there is an efficient capital market for information to be directly processed and reflected in stock prices. Beaver [13] also finds evidence that information outflow increases during earnings announcement period. Based on our outlook of information being useful for investors, we predict that by producing a more readable report, investors will obtain more relevant information that will affect their investment choices, hence increasing the ERC. This brings us to the first hypothesis:

H1. Investors’ responsiveness toward earnings is positively related to less complex disclosures.

Firms mainly have incentives to voluntarily disclose relevant information to reduce information asymmetries as well as agency costs [15]. Continuing our initial discussion, many prior researches have shown that firms, however, do not always provide simple disclosure. Bloomfield [6] on his discussion of Li [5], explains various possible reasons affecting disclosure complexity - obfuscation, ontology, attribution, misdirection, management by exception, conservatism, litigation - in which two most prominent factors according to Lo et al. [3] are obfuscation and ontology, that is they knowingly use hard-to-understand words in order to hide bad performance, or that bad news is by nature harder to disclose, thus more complex. Lo et al. [3] extends Li’s [5] analysis with increasing specificity related to benchmark beatings and earnings management, and finds that firms that are likely to be involved in earnings management in order to meet or beat prior year’s earnings have more complex MD&A disclosures. Consistent with the previous, Ajina et al. [4] also finds a positive relation between earnings management and disclosure complexity. Assuming an informationally efficient capital market, when companies provide ample, accurate and timely disclosures, agency costs of debt and equity are low [23]. Since complex disclosure contradicts the main purpose of providing understandable and useful information, we can say that the increasing complexity reflects a failure in reducing information asymmetry, and therefore agency costs. Hence the next hypothesis is:

H2. Agency costs are negatively related to less complex disclosures.

Despite the benefits, reducing disclosure complexity also has its costs. Many prior studies [3,4,5,6,7] link firm’s performance with disclosure quality. Li’s [5] management obfuscation hypothesis argues that managers have incentives to obfuscate information when firm performance is poor because the market may react with a
delayed incorporation of the information contained in complicated disclosures [6]. Managers may intentionally hide bad performances in order to circumvent negative effects on the firm’s stock prices. The main assumption behind it is that higher information processing costs would make it harder for investors to reveal the ugly truth [5]. Reducing complexity of disclosures would reverse the whole point of management’s obfuscation hypothesis, and therefore may lead to unintentional disclosing of their disadvantages or that of their owners, diminishing their competitive advantage and ruining the investors’ perceptions of the company. Verrecchia [16], Luo et al. [18], and Darrough and Stoughton [17] refers these as proprietary costs. Proprietary costs of disclosing information exist due to the nature of competition - that is the existence of competitors as well as possible market entrants. Proprietary costs can be minimized if information revealed do not result in opponents taking unfavorable actions [17,18]. Several other research shows that in the absence of proprietary costs, manager will hide bad performances in order to circumvent negative effects on the firm’s stock prices. The main assumption is that higher information processing costs would make it harder for investors to reveal the ugly truth [5].

3. Research Methodology

The sample used in this study is based on companies listed on the Indonesian Stock Exchange (IDX) for the period 2016 (totaling 559 companies) since the annual reports of these companies are easily accessible on the IDX website. Capital market information is obtained from Yahoo Finance. All financial institutions are excluded in this study as they have different capital structures and mostly do not provide the required data. Other criteria for data exclusion follows Li [5].

3.1. Disclosure Complexity

Consistent with previous studies [3,5,27], the annual report readability is measured using the Gunning Fog Index (or simply Fog Index), using the number of words per sentence and the number of syllables per words in determining the complexity of disclosures. Following prior studies, calculation of the index in this study focuses on the Management Analysis and Discussion (MD&A) section, which contains manager’s discussion of past performance and future prospects [5]. The fog index is calculated as follows:

\[
\text{Fog Index} = 0.4 \times \text{(words per sentence} + \text{percentage of complex words)}
\]  

(1)

The index indicates the number of years of formal education a reader would need to read the text once and understand. Complex words refer to those having three or more syllables per word. Longer sentences and sentences with more complex words will result in the increase of the fog index, hence the disclosure complexity. Consistent with Li [5], Fog 18 means that text is unreadable; 14-18 (difficult); 12-14 (ideal); 10-12 (acceptable); and 8-10 (childish).

3.2. Earnings Response Coefficient

Similar to previous study on ERC [10,28], the ERC is calculated by regressing the Cumulative Abnormal Return (CAR), and the unexpected earnings as follows:

\[
\text{CAR}_{it} = \text{R}_{it} - \text{R}_{i}
\]  

(2)

where:

\begin{align*}
\text{CAR}_{it} & \quad \text{Abnormal return of company } i \text{'s stock in period } t \\
\text{R}_{it} & \quad \text{Stock return of company } i \text{'s stock in period } t \\
\text{R}_{i} & \quad \text{Expected return of company } i \text{'s stock in period } t \\
\text{E}_{iT} & \quad \text{Reported earnings of company } i \text{ in period } t \\
\text{E}_{it} & \quad \text{Unexpected change in total annual earnings}
\end{align*}

Therefore, the cumulative abnormal returns is calculated as follows:

\[
\text{CAR}_{it} = \alpha_0 + \alpha_1 \text{UE}_{it} + \alpha_2 \text{R}_{it} + \epsilon
\]  

(6)
where:
$\text{CAR}_{it}$ Cumulative abnormal return of company $i$ in period $t$
$a_0$ Constant
$a_1$ Slope of regression, the ERC
$\text{UE}_{it}$ Unexpected earnings of company $i$ in period $t$
$\epsilon$ Sample error

Ball and Brown’s [8] theory suggests that the coefficients should be positive and significant if the investors value the changes in the total earnings as price relevant information.

3.3. Agency Costs

Previous study (i.e. [29]) related to agency costs use the cost operating ratio and asset utilization ratio as a proxy for agency costs. We use cost operating ratio in this study which is calculated by scaling total operating expenses by total sales for the period. The amount of expense as well as the total sales for the period are obtained directly from the company’s annual report available on the company’s website and/or on the IDG website.

3.4. Proprietary Costs

The proprietary cost referred in this study focuses on the loss of competitive advantage. As discussed earlier, the proprietary cost of providing less complex disclosure is expected to lower as the firm’s competitive advantage, in this study, captured by its gross margin.

$$\text{Gross Margin(\%)} = \frac{(\text{Net Sales} - \text{Cost of Sales})}{\text{Net Sales}}$$ (7)

3.5. Interest on Bank Loans

Interest on bank loans may vary from period due to the difference in the amount of loan for the period. Hence, in order to simplify the measurement, interest on bank loans is measured by the weighted average of interest rate given by banks for the period. The information can be easily accessed on the company’s notes to financial statements.

4. Results

All results in this study is obtained through the IBM SPSS Statistics software version 23 using the linear regression function for each hypothesis.

4.1. Descriptive statistics

Table 1 presents the overall sample statistics. The mean fog index for the whole sample is 17.17, which according to the standard interpretation used by Li [5] is considered “difficult”, and requires at least a high school diploma to understand. This value is similar to those found in Li [5] and Lo et al. [3], where mean Fog is 18.23 and 18.

4.2. Earnings response coefficient and disclosure complexity

Table 2 shows the results of linear regression for Hypothesis 1. The positive coefficient of 0.002 and a t-statistic of 0.256 is in contrary to our initial hypothesis and is not significant at any level. This finding suggests that the MD&A section in annual reports may not be the most fundamental piece of information required by Indonesian investors prior to decision making, and therefore complex disclosure in such areas do not affect them significantly. This also suggest that Indonesia is not an efficient capital market, rather a semi-strong form efficient market. In a less efficient market, price changes as a result of earnings surprises is said to be “underreacting” as changes are small and takes time to be recognized in the market [8,22].

4.3. Agency cost and disclosure complexity

Table 3 shows the results of linear regression for Hypothesis 2. Despite being highly significant at 1 percent and having an adjusted R-square of 41.7 percent, the relation between agency cost and disclosure complexity opposes our initial hypothesis. The negative coefficient of -0.009 and t-statistic of -8.268 suggest that with an increase in fog, agency cost decreases. The regression results above

Table 1. Descriptive statistics for variables used

<table>
<thead>
<tr>
<th>Variables</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fog Index (full sample)</td>
<td>11.89</td>
<td>21.27</td>
<td>17.17</td>
<td>1.31</td>
<td>338</td>
</tr>
<tr>
<td>ERC</td>
<td>0.67</td>
<td>1.28</td>
<td>0.97</td>
<td>0.15</td>
<td>211</td>
</tr>
<tr>
<td>- Fog Index</td>
<td>12.40</td>
<td>20.62</td>
<td>17.12</td>
<td>1.30</td>
<td>211</td>
</tr>
<tr>
<td>Agency Cost</td>
<td>0.00</td>
<td>0.06</td>
<td>0.03</td>
<td>0.02</td>
<td>95</td>
</tr>
<tr>
<td>- Fog Index</td>
<td>13.77</td>
<td>20.30</td>
<td>17.17</td>
<td>1.28</td>
<td>95</td>
</tr>
<tr>
<td>Proprietary Cost</td>
<td>-0.03</td>
<td>0.49</td>
<td>0.22</td>
<td>0.13</td>
<td>252</td>
</tr>
<tr>
<td>- Fog Index</td>
<td>11.89</td>
<td>20.62</td>
<td>17.16</td>
<td>1.34</td>
<td>252</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>0.09</td>
<td>0.14</td>
<td>0.11</td>
<td>0.01</td>
<td>196</td>
</tr>
<tr>
<td>- Fog Index</td>
<td>11.89</td>
<td>21.27</td>
<td>17.11</td>
<td>1.38</td>
<td>196</td>
</tr>
</tbody>
</table>

The difference between the number of N in each variable and the full sample is due to data normalization using causewise diagnostics.

Table 2. ERC and disclosure complexity

<table>
<thead>
<tr>
<th>Variables</th>
<th>Beta</th>
<th>t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.946</td>
<td>7.181</td>
</tr>
<tr>
<td>Fog Index</td>
<td>0.002</td>
<td>0.233 (0.816)</td>
</tr>
<tr>
<td>R-square</td>
<td>0.206</td>
<td></td>
</tr>
<tr>
<td>Adj. R-square</td>
<td>0.043</td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>3.066</td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>2.318</td>
<td></td>
</tr>
<tr>
<td>p-value</td>
<td>0.029</td>
<td></td>
</tr>
<tr>
<td>VIF</td>
<td>1.005</td>
<td></td>
</tr>
</tbody>
</table>

Dependent Variable: ERC
* * * significant at 0.10, 0.05, 0.01 level.
VIF shows no multicollinearity.

Table 3. Agency Cost and Disclosure Complexity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.190</td>
<td>9.770</td>
</tr>
<tr>
<td>Fog Index</td>
<td>-0.009</td>
<td>-8.268*** (0.000)</td>
</tr>
<tr>
<td>R-square</td>
<td>0.424</td>
<td></td>
</tr>
<tr>
<td>Adj. R-square</td>
<td>0.417</td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>68.360</td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>2.152</td>
<td></td>
</tr>
<tr>
<td>p-value</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>VIF</td>
<td>1.000</td>
<td></td>
</tr>
</tbody>
</table>

Dependent Variable: Agency Cost
* * * significant at 0.10, 0.05, 0.01 level.
VIF shows no multicollinearity.
suggest that in Indonesia, firms with more complex reports tend to have lower agency costs. A reason for this contrary finding may be due to tax planning. Tax planning such as tax avoidance can be done by increasing expenses for the period, and therefore reducing the amount of taxable income for that period. In line with this, Chen et al. [30] find robust evidence that tax planning increases agency costs. Another reason may be because larger firms bear higher information asymmetry between their stakeholders. Li [5] and Lo et al. [3] in their findings prove that firm size is inversely related to the fog index - larger firms tend to provide simpler reports since their large-scale investors are mostly aware of the overall conditions of the company. Jensen [31] finds that as firm size increases, more costs are required to monitor and control the firm, hence increasing the agency cost. Larger firms are managed mostly by outsiders - not just owners - hence give rise to agency cost [15,29].

4.4. Proprietary Cost and Disclosure Complexity

Table 4. Proprietary Cost and Disclosure Complexity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.203</td>
<td>1.982</td>
</tr>
<tr>
<td>Fog Index</td>
<td>-0.001</td>
<td>-0.148 (0.883)</td>
</tr>
<tr>
<td>R-square</td>
<td>0.088</td>
<td></td>
</tr>
<tr>
<td>Adj. R-square</td>
<td>0.077</td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>8.006</td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>2.084</td>
<td></td>
</tr>
<tr>
<td>p-value</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>VIF</td>
<td>1.029</td>
<td></td>
</tr>
</tbody>
</table>

Dependent Variable: Proprietary Cost
* *, **, *** significant at 0.10, 0.05, 0.01 level.
VIF shows no multicollinearity.

The regression result for proprietary cost and disclosure complexity is shown in Table 4. Based on our result, proprietary cost is not significantly related to disclosure complexity at any level, despite having a negative coefficient that is in line with our early hypothesis. This suggests us that information released by Indonesian listed companies through their MD&A section of the annual reports are not of great attention to their opponents. Proprietary costs are not of huge significance if they do not lead the firms’ opponents to take certain unfavorable actions [18]. This further strengthens our conclusion on the first hypothesis - that Indonesia has a rather semi-strong form capital market.

4.5. Interest rate and disclosure complexity

Table 5. Interest Rate and Disclosure Complexity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.138</td>
<td>14.840</td>
</tr>
<tr>
<td>Fog Index</td>
<td>-0.002</td>
<td>-2.826*** (0.005)</td>
</tr>
<tr>
<td>R-square</td>
<td>0.040</td>
<td></td>
</tr>
<tr>
<td>Adj. R-square</td>
<td>0.035</td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>7.985</td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>1.846</td>
<td></td>
</tr>
<tr>
<td>p-value</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>VIF</td>
<td>1.000</td>
<td></td>
</tr>
</tbody>
</table>

Dependent Variable: Interest Rate
* *, **, *** significant at 0.10, 0.05, 0.01 level.
VIF shows no multicollinearity.

Table 5 presents the regression result of our final hypothesis. The negative coefficient of -0.002 and t-statistic of -2.826 is in line with our prediction. Despite the low explanatory levels shown by the adjusted R-square, the relationship between interest rate given by banks and MD&A disclosure complexity is highly significant at 1 percent. This finding proves that, in Indonesia, companies with less complex disclosures have higher chances of being charged “extra”, shown by the higher rates given to them for loans. In line with our underlying theory that simplifying disclosures may expose a firm’s poor performance, Chen et al. [26] also find evidence that fraudulent firms will have to bear higher interest rates compared to non-fraudulent ones. This suggest us that, in Indonesia, providing more information by producing more complex reports actually reassure debtholders of their fraudulent-free management with more information on the company, thus lower interest rates.

5. Conclusion

This paper is the first to explore the effects of reducing disclosure complexity on several aspects - earlier hypothesized as the costs and benefits - in Indonesia. We initially predicted that with more readable annual reports, ERC will be positively affected, information asymmetry will be reduced - hence lower agency costs, proprietary costs will increase with the increase in proprietary information revealed in a more readable report, and interest rates given by banks as lenders will be higher. Based on our findings, in short, we can say that Indonesia does not have an efficient capital market. Information is not directly processed and reflected in stock prices. However, in line with our initial hypothesis, interest rates given by banks are greatly affected by the fog index. The overall empirical results show that: 1) Investors do not rely on annual reports for their investment-decision-making, since fog index do not affect ERC at any significant levels; 2) Agency costs are inversely related to disclosure complexity, suggesting that firms producing simpler reports are either mostly involved in tax planning, or larger Indonesian firms with lower fog usually bear higher monitoring costs; 3) Companies do not gather information on their opponents from their annual reports, since proprietary costs are not significantly affected by disclosure complexity; and 4) Interest rates on loans given by banks are greatly affected by disclosure complexity. We find evidence that firms with more complex reports tend to get lower rates on bank loans as compared to those with much more readable reports, suggesting that providing debtholders with more complex information actually reassure them to modify credit terms and offer lower rates.

This paper is, however, still limited to various constraints. Further research may want to consider using data from the following year after the report is published, and also calculating the fog not only based on MD&A section, rather the whole report.

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