Information Asymmetry as an Intervening Variable on the Effect of Earnings Quality on the Cost of Equity

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Abstract. The increasing competition demands companies to expand their operations in order to survive and remain competitive. This expansion includes business expansion, product innovation, and product differentiation, all of which ultimately lead to an increased need for funding. Therefore, companies require external parties capable of providing funding, such as investors or creditors. The objective of this research is to examine whether the quality of earnings affects the cost of equity and whether the quality of earnings affects the cost of equity with asymmetric information as an intervening variable. The quality of earnings is measured using discretionary accruals, which are calculated using the Modified Jones Model. Meanwhile, asymmetric information and the cost of equity are measured using bid-ask spreads and price-earning ratios, with agency theory as the primary theory underpinning this research. The research sample consists of 46 companies selected through purposive sampling from the manufacturing sector of consumer goods industry listed on the Indonesia Stock Exchange during the years 2019-2021. The research method employed in this study is path analysis, which explains the direct and indirect relationships between the quality of earnings, asymmetric information, and the cost of equity. Based on the results of the path analysis, it is evident that the quality of earnings does not directly affect the cost of equity. Furthermore, the testing of the second hypothesis indicates that the quality of earnings does not have an indirect effect on the cost of equity with asymmetric information as an intervening variable.

Keywords: Information Asymmetry, Path Analysis, Cost of Equity, and Earnings Quality.

A. INTRODUCTION

The intensifying competition compels companies to expand their operations in order to survive and remain competitive [1], [2]. This expansion includes business expansion, product innovation, and product differentiation, all of which ultimately lead to an increased need for funding. Therefore, external parties capable of providing funding, such as investors or creditors, are required. According to Sasongko et al. [3], in maintaining their business continuity, companies require funds from lenders and investors, which are obtained through the issuance of stocks or bonds traded in the capital market.

Financial reporting is a crucial part of communication, providing essential information to stakeholders both internally and externally. Financial reports, especially in terms of profit information, are considered a reflection of a company’s performance, serving as a reference for decision-making by interested parties [4]. The purpose of financial reporting is also to provide information to report users to help them interpret the economic activities of a company. Therefore,
financial reports are of paramount importance to their users for decision-making. One of the elements found in financial reports is profit. Profit is considered of high quality if the reported earnings can be used by financial report users to make informed decisions and convey the true financial performance [5], [6].

The quality of earnings can be measured using the total accruals change measure. High-quality earnings are those with minimal changes in total accruals. This measurement assumes that changes in total accruals are caused by changes in discretionary accruals. In a corporate entity, the aspect of earnings quality cannot be separated from agency conflicts. Based on agency theory by Jensen and Meckling [7], it is explained that principals delegate decision-making authority to management (agents), and therefore, management, as the company’s stewards, has broader access to internal information and company prospects compared to principals. This situation leads to information asymmetry. Information asymmetry is the imbalance of information between parties, where one party has more information than the other [8], [9], which encourages managers to engage in earnings management practices.

Earnings management includes managerial efforts to maximize or minimize earnings, including income smoothing to align with management's desires. Research on the impact of earnings quality on the cost of equity has been conducted by several researchers. Triningtyas et al. have examined the direct impact of earnings quality, proxied by earnings management, on the cost of equity capital, concluding that earnings quality significantly affects the cost of equity [10]–[14]. However, studies conducted by Wulandari et al. have stated that earnings quality does not significantly affect the cost of equity [15]–[19].

The motivation for conducting research on the impact of earnings quality on the cost of equity with asymmetric information as an intervening variable is due to the limited empirical research on this topic [20], [21]. Previous studies have focused more on testing the relationship between financial reporting levels and corporate governance on information asymmetry and the cost of equity [22]–[24]. Another motivation for this research is the existence of a research gap concerning this topic. The aim of this study is to determine the impact of earnings quality on the cost of equity and to investigate the influence of earnings quality on the cost of equity with asymmetric information as an intervening variable.

B. METHOD

The research methodology used in this study is associative research, which aims to explore relationships between two or more variables. The study focused on companies listed on the Indonesia Stock Exchange (Bursa Efek Indonesia or BEI) during the period of 2019-2021, using official data from the BEI website at https://www.idx.co.id. The population for this research consists of manufacturing companies in the consumer goods industry that were listed on the BEI during the specified period of 2019-2021.

Figure 1 Conceptual Framework of Research
The sampling technique used in this research is purposive sampling, which is a non-probability sampling method where the sample selection is based on specific considerations or criteria tailored to the research objectives [25]. The criteria used in this research are as follows:

1. Manufacturing companies in the consumer goods industry sector whose stocks remained listed from 2019 until December 2021 and regularly published audited annual financial reports on the BEI since 2018-2021.
2. Manufacturing companies in the consumer goods industry sector that have stock price data, bid prices, and ask prices available for their shares.

Based on these criteria, a sample of 46 manufacturing companies in the consumer goods industry sector listed on the BEI during the 2019-2021 period was obtained. The data used in this research are secondary data. The secondary data used in this research are financial reports published by manufacturing companies in the consumer goods industry sector listed on the BEI. These reports were obtained from the official BEI website (https://www.idx.co.id).

The steps in analyzing the data are as follows:

1. Descriptive Analysis: Conducting descriptive analysis to provide explanations of the observed research variables.
2. Classical Assumption Tests:
   
   First, a normality test is performed using the Kolmogorov-Smirnov (K-S) test, with a significance level of 0.05. If the significance value of the Kolmogorov-Smirnov test is greater than 0.05, it can be concluded that the data is normally distributed; otherwise, if the value is less than 0.05, the data is not normally distributed. Second, the Durbin-Watson (DW-test) is used for autocorrelation testing. The Durbin-Watson test is used for first-order autocorrelation and requires the presence of an intercept (constant) in the regression model with no other variables between the independent variables. Third, the heteroskedasticity test is conducted using the Glesjer test, with a significance level of 5%. If the significance value of the Glesjer test is greater than 5%, it means it is not statistically significant [26]; otherwise, if the significance value is less than 5%, it is statistically significant. If the independent variables significantly affect the dependent variable in the regression model, there is an indication of heteroskedasticity [27]. Fourth, multicollinearity is detected using the tolerance and variance inflation factor (VIF) values. If tolerance is greater than 0.10 (>0.10) and VIF is less than 10 (<10), then multicollinearity is not present [26]. This test is only conducted for the second hypothesis of the second equation.

Hypothesis testing

Hypothesis testing in this research utilizes path analysis. The first research hypothesis (H1) regarding the influence of earnings quality on equity cost represents a direct influence parameter (p1). Meanwhile, the second research hypothesis (H2), which aims to examine the influence of earnings quality on equity cost with asymmetric information as an intervening variable, constitutes indirect influence parameters (p2 and p3). Coefficient of Determination Test The coefficient of determination test is conducted to assess the extent to which independent variables can explain the variation in dependent variables in the research. A smaller value indicated by the Adjusted R-squared implies a reduced capability of independent variables to explain the dependent variable. This provides insights into how well the model can explain the observed phenomenon in your research [25]. Subsequently, the data processing is carried out using the Statistical Package for the Social Sciences (SPSS) version 26.

Determining Regression Errors In path analysis, regression errors are denoted as ε1 resulting from the first regression and ε2 resulting from the second regression. The magnitude of ε can be
calculated as the square root of 1 minus R-squared $\epsilon = \sqrt{1 - R^2}$ for each regression. Regression errors indicate the percentage of variation in the dependent variable that cannot be explained by the independent variables [26].

These steps are essential components of path analysis to comprehend the relationships between variables in your research and test your research hypotheses effectively.

C. RESULT AND DISCUSSION

Results of descriptive statistical calculations for these variables from 46 manufacturing companies in the consumer goods industry sector registered on the IDX for the 2019-2021 period.

Table 1 Descriptive Analysis of Discretionary Accruals (DA)

<table>
<thead>
<tr>
<th>Desc.</th>
<th>DA</th>
<th>AI</th>
<th>PER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2019</td>
<td>2020</td>
<td>2021</td>
</tr>
<tr>
<td>Min</td>
<td>-0.17</td>
<td>-0.53</td>
<td>0.00</td>
</tr>
<tr>
<td>Max</td>
<td>0.60</td>
<td>0.75</td>
<td>180.45</td>
</tr>
<tr>
<td>Mean</td>
<td>-0.01</td>
<td>-0.01</td>
<td>57.36</td>
</tr>
<tr>
<td>SD</td>
<td>0.14</td>
<td>0.19</td>
<td>36.71</td>
</tr>
</tbody>
</table>

Based on Table 1 above, it can be explained that the lowest discretionary accruals amounted to -45.23%, while the highest was 49.82%. It is known that the average value of discretionary accruals in manufacturing companies in the consumer goods industry sector for the period 2019-2021 is -3.92% with a standard deviation of 16.18%. The lowest discretionary accruals or the highest earnings quality in 2019 was experienced by PT. Sariguna Primatirta Tbk at -0.1715, while the highest discretionary accruals or the lowest earnings quality was experienced by PT. Tiga Pilar Sejahtera Food Tbk at 0.6051. In 2020, the lowest discretionary accruals or the highest earnings quality was reported by PT. Pratama Abadi Nusa Industri Tbk at -0.5310, while the highest discretionary accruals or the lowest earnings quality was reported by PT. Tiga Pilar Sejahtera Food Tbk at 0.7535.

In 2021, the lowest discretionary accruals or the highest earnings quality was observed in PT. Pyridam Farma Tbk at -0.6545, and the lowest earnings quality (highest discretionary accruals) was reported by PT. Buyung Poetra Sembada Tbk at 0.1360. The trend of discretionary accruals from 2019 to 2021 experienced fluctuations, with an increase in discretionary accruals or a decrease in earnings quality from 2019 to 2020, where the average discretionary accruals changed from -0.0081 in 2019 to -0.0076 in 2020. Then, there was a decrease in discretionary accruals or an increase in earnings quality generated by companies in 2021, amounting to -0.1020.

Based on Table 1, it can be explained that the highest influence of asymmetric information is 178.7983, while the lowest is 0.0000. The average value of asymmetric information in manufacturing companies in the consumer goods industry sector for the period 2019-2021 is 63.2890 with a standard deviation of 38.6292. In 2019, PT. Indofarma Tbk had the highest asymmetric information at 180.4510, while PT. Tiga Pilar Sejahtera Food Tbk had the lowest at 0.0000. In 2020, PT. Indofarma Tbk again had the highest asymmetric information at 168.6800, and PT. Bumi Teknokultura Unggul Tbk and PT. Magna Investama Mandiri Tbk had the lowest at 0.0000. In 2021, PT. Pratama Abadi Nusa Industri Tbk had the lowest asymmetric information, and PT. Bumi Teknokultura Unggul Tbk and PT. Magna Investama Mandiri Tbk still had the lowest at 0.0000. Looking at the development over the years from 2019 to 2021, asymmetric information in the consumer goods industry tends to fluctuate. In 2019, the magnitude of asymmetric information was 57.3690, then it increased to 74.2031 in 2020. However, in 2021, the average magnitude of asymmetric information decreased to 58.2948.
This indicates that the magnitude of asymmetric information in manufacturing companies in the consumer goods industry experiences both increases and decreases each year.

Based on Table 1, it can also be explained that the lowest price-earnings ratio or highest cost of equity is 1,937.11, while the highest price-earnings ratio or lowest cost of equity is 224,509.59. The negative sign indicates that investors receive a negative return, meaning they incur losses on their investments. The average price-earnings ratio in manufacturing companies in the consumer goods industry sector for the period 2019-2021 is 4,887.21 with a standard deviation of 33,126.85. In 2019, PT. Prima Cakrawala Abadi Tbk had the lowest price-earnings ratio or highest cost of equity, and PT. Indofarma Tbk had the highest price-earnings ratio or lowest cost of equity. In 2020, PT. Kedaung Indah Can Tbk had the lowest price-earnings ratio or highest cost of equity, while PT. Indofarma Tbk had the highest price-earnings ratio or lowest cost of equity. In 2021, PT. Indofarma Tbk had the lowest price-earnings ratio or highest cost of equity, and PT. Pratama Abadi Nusa Industri Tbk had the highest price-earnings ratio or lowest cost of equity. Looking at the trend from 2019 to 2021, the price-earnings ratio fluctuated, with an increase in the price-earnings ratio or a decrease in the cost of equity from 2019 to 2020, where the average price-earnings ratio changed from 88.23 in 2019 to 38.62.

Classical Assumption Test Results

Table 2 Normality Test Results (After Twice Outlier)

<table>
<thead>
<tr>
<th>Information</th>
<th>Sig. (Normality)</th>
<th>Durbin-Watson</th>
<th>Sig. (Gletsjer)</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equation 1</td>
<td>0.125</td>
<td>1.991</td>
<td>0.276</td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Equation 2</td>
<td>0.200</td>
<td>1.875</td>
<td>0.794</td>
<td>1.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

First, it is noted that the results of the normality test, after removing outlier data twice, reduced the initial number of observations from 128 to 102. The significance values for equations 1 and 2 are 0.125 and 0.200, respectively. The test results indicate that the values are greater than 0.05, which means that the data follows a normal distribution.

Second, from Table 2, the results of the Autocorrelation test performed using Durbin-Watson (DW) are presented. The research model is considered to be free from autocorrelation if the DW value falls between du and 4-dw (du<d<4-du). Based on the Durbin-Watson test results in Table 4.9, it can be seen that the Durbin Watson value for the first equation is 1.991, while for the second equation, the Durbin Watson value is 1.875. Because the DW values generated by both equations are higher than the upper limit (du) in the DW table, which is 1.697 (k=1, n=102) and 1.717 (k=2, n=102) respectively, it indicates that du<dw, and thus, there is no autocorrelation in the research data.

Third, in Table 1, the significance of the Glejser test is observed. Based on the analysis in Table 1, the significance values for the first equation are 0.276, and for the second equation, the parameters two and three have values of 0.794 and 0.996, respectively. These values are above 5%, suggesting that heteroskedasticity is not present. Fourth, the results of the multicollinearity test in Table 1 show that the VIF (Variance Inflation Factor) is 1.000, which is less than 10, and the tolerance value is 1.000, which is greater than 0.10. It can be concluded that there is no multicollinearity.

Based on the data analysis conducted, the results can be used to answer the hypotheses in this research. Hypothesis testing in this study is based on the significance values. The research hypotheses are considered accepted when the significance values are less than 0.05. Below are the results of the hypothesis testing obtained in this research:
Table 4 Path Analysis Test Results (Path Analysis)

<table>
<thead>
<tr>
<th>Information</th>
<th>Beta</th>
<th>T</th>
<th>Sig.</th>
<th>Adjusted R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equation 1</td>
<td>0.003</td>
<td>0.029</td>
<td>0.977</td>
<td>-0.010</td>
</tr>
<tr>
<td></td>
<td>-0.035</td>
<td>-0.346</td>
<td>0.730</td>
<td>-0.017</td>
</tr>
<tr>
<td>Equation 2</td>
<td>0.045</td>
<td>0.447</td>
<td>0.656</td>
<td></td>
</tr>
</tbody>
</table>

Based on table 4, the path analysis equation that can be created in this research is as follows:

\[
\begin{align*}
\varepsilon_1 &= \sqrt{(1 - (-0.001))} = 1 \\
\varepsilon_2 &= \sqrt{(1 - (-0.017))} = 1 \\
AI &= -0.003KL + 1 \\
BE &= -0.035 + 0.045AI + 1
\end{align*}
\]

Figure 2 Path Analysis Results

In the results of the path analysis above, it can be seen that path p1 indicates that the quality of earnings does not have a significant influence on the cost of equity because the significance value is greater than 0.05, specifically 0.730. Path p2 shows that the quality of earnings does not have a significant influence on information asymmetry because the significance value is greater than 0.05, specifically 0.977. Similarly, path p3 indicates that information asymmetry does not have a significant influence on the cost of equity because the significance value is greater than 0.05, specifically 0.656.

Based on the table above, the second hypothesis suggests that the influence of the quality of earnings on information asymmetry is not significant because the significance value is 0.339, which is greater than 0.05. Additionally, the influence of information asymmetry on the cost of equity shows a significance value of 0.656, also greater than 0.05. This indicates that there is no indirect influence between the quality of earnings and the cost of equity with information asymmetry as an intervening variable. Therefore, the research hypothesis, which suggests that information asymmetry mediates the influence of the quality of earnings on the cost of equity, is rejected due to a lack of empirical evidence to support it.

The magnitude of the direct influence = -0.035
The magnitude of the indirect influence = (-0.003 x 0.045) = -0.000135
Total influence of earnings quality on equity cost = -0.035135
The results of the path analysis indicate that there is no significant influence between the variable of earnings quality and the cost of equity. This outcome does not support the previously formulated hypothesis, which stated that earnings quality negatively affects the cost of equity. The lack of a significant influence of earnings quality on the cost of equity can be attributed to the high variation (range of values) in the cost of equity between different periods, as indicated by the standard deviation of the cost of equity being above the average value. Additionally, the data on earnings quality in this study primarily consisted of negative values, suggesting accrual deviations made by management to reduce the company’s reported earnings (income minimization). This indicates that the earnings quality within the companies studied is low. Furthermore, the data on the cost of equity in this research, approximated using the price-earnings ratio, mostly consisted of high values (low cost of equity).

The data used in this study does not align with existing theory, which posits that when earnings quality is low, the cost of equity should be high. However, the data indicates that when earnings quality is low, the cost of equity is also low. This discrepancy leads to the conclusion that earnings quality does not significantly impact the cost of equity. Regarding the influence of earnings quality on the cost of equity with information asymmetry as an intervening variable, the path analysis results show that the earnings quality variable does not have a significant effect on the cost of equity (cost of equity) with information asymmetry as an intervening variable. This finding does not support the previously formulated hypothesis, which suggested that earnings quality affects the cost of equity with information asymmetry as an intervening variable.

These research results do not align with agency theory, as proposed by Jensen & Meckling [7]. Agency theory assumes that all individuals act in their own interest, with principals interested in increasing financial outcomes, and agents interested in rewards and compensation for meeting specific qualifications associated with the agent-principal relationship. These conflicting interests can lead to agency conflicts resulting in information imbalances (information asymmetry) received by agents and principals [28]. Agency conflicts that result in opportunistic management behavior can lead to lower earnings quality. Reduced earnings quality can result in decision-making errors for users such as investors and creditors, thereby reducing the company's value [29], [30]. The lack of influence suggests that the quality of earnings on the cost of equity through information asymmetry is influenced by investor expectations of earnings management [31]–[33]. Additionally, investors do not solely rely on financial statement results, especially the income statement; they also consider other factors when making investment decisions.

D. CONCLUSION

This study aimed to investigate the direct influence of earnings quality on the cost of equity and the indirect influence of earnings quality on the cost of equity with information asymmetry as an intervening variable in manufacturing companies within the consumer goods sector listed on the Indonesia Stock Exchange (BEI) during the period 2019-2021. Based on the results of the conducted tests, several conclusions can be drawn. Firstly, the earnings quality variable does not have a significant impact on the cost of equity. Secondly, earnings quality does not have a significant impact on the cost of equity (cost of equity) when information asymmetry is considered as an intervening variable. For future research, it is suggested to use a broader sample, not limited to manufacturing companies in the consumer goods sector. This would provide a more extensive scope for the conclusions drawn in the study. Additionally, using a longer and more recent observation period is
E. REFERENCES


**Author declaration**

**Author contributions and responsibilities**

The authors made major contributions to the conception and design of the study. The authors took responsibility for data analysis, interpretation and discussion of results. The authors read and approved the final manuscript.

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During the preparation of this work the author did not use AI to write, edit, or other things related to the manuscript.