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Information Asymmetry Moderates the Impact of Green Intellectual Capital and Real Earnings Management on Future Stock Returns

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Abstract
The aim of this study is to (1) analyze the impact of green intellectual capital and real earnings management on future stock returns. (2) The role of information asymmetry as a moderating variable for the impact of green intellectual capital and real profit management on future stock returns. This research method uses secondary data from companies in the non-cyclical consumer sector listed on the Indonesian Stock Exchange (BEI). The research sample was selected in the period 2021-2022 based on purposive sampling criteria–, resulting in 158 observations. The data analysis was performed using the moderated regression analysis (MRA) approach to test the relationship between the variables in this study. The results of this investigation show that: (1) Green intellectual capital and real earnings management have a positive impact on future stock returns. (2) Information asymmetry does not weaken the relationship between green intellectual capital and future stock returns, so that it is classified as a moderating predictor. On the other hand, information asymmetry is shown to attenuate the impact of real earnings management on future stock returns, indicating that this variable acts as a full moderator. (3) The control variable leverage has no effect on future stock returns, while firm size has a negative effect on future stock returns.

Keywords: Information Asymmetry; Green Intellectual Capital; Real Profit Management; Future Stock Returns
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1.0 INTRODUCTION

Investors are encouraged to invest what they want, with the aim of making a profit commensurate with the capital invested. The return (Ansorimal et al., 2022), or what is often referred to as the investment yield, is made up of the capital gain/loss, i.e. the difference between the current price of the asset and the price in the previous period (Pt - Pt-1), and the yield, i.e. the percentage of cash income from equity investments, generally in the form of dividends (Dt). The formula for calculating stock returns is Rt = Pt-Pt-1+Dt/Pt. The returns may be realized returns, i.e. returns that have occurred and are calculated on the basis of historical data. This return serves as an indicator for the evaluation of the company's performance. This return is also a reference for estimating expected returns in the future (Renaldo, Wijaya, et al., 2024). Expected return is a return that has not yet occurred but is predicted to occur in the future, often referred to as future stock return (Jogiyanto, 2017). Future stock return is a return that is predicted for the future and serves as a basis for investment decisions.

Information asymmetry arises when the agent has a deeper understanding of the future conditions and prospects of the firm compared to the principal (Uswati & Mayangsari, 2016). Management that wants to demonstrate good performance can be encouraged to adjust financial reports so that profits meet owners' expectations. Differences in information between management and owners can open up opportunities for managers to adopt earnings management practices (Hocky et al., 2023).

Moral hazard refers to the actions of a manager that are not fully known to investors, including shareholders and creditors, so that managers have the opportunity to act outside the terms of the contract and even perform unethical or inappropriate actions (Soemarso, 2018). The implementation of earnings management means that there is an information asymmetry. The higher the level of earnings management, the greater the impact of information asymmetry. As a result, the stock returns achieved also increase due to this information (Renaldo, Suhardjo, Putri, Sevendy, et al., 2021), which is then used as a signal to encourage investors to invest their capital and hope for high future stock returns.

According to Cohen et al. (2008), following the passage of the Sarbanes-Oxley Act, there was a shift from accrual-based management to earnings management through real activity, with the aim of avoiding detection by auditors and regulators. According to Graham et al. (2005), the emphasis on accrual manipulation can create risks for companies as there is limited flexibility in reporting accrual activity.

Green intellectual capital refers to intangible assets of individuals and organizations that focus on efforts to protect and promote environmental sustainability. According to Eucharistia & Rachmawati (2023) and Chen (2008), green intellectual capital consists of three main components, namely green human capital, green structural capital and green relational capital. These components are very important in explaining the relationship between corporate sustainability and company performance, including future stock returns. Green intellectual capital is recognized as a new concept in business development that focuses on environmentally friendly principles, as explained by Zahid et al. (2018) and Gogan et al. (2016). In the wake of technological progress and globalization, companies are under great pressure to maintain stable growth and achieve certain financial targets (Wati et al., 2024).

The research conducted by Sugiyanto & Febrianti, (2021) and Wato, (2016) on the discrepancy between independent and dependent variables explain that green intellectual capital has an impact on future stock returns. Meanwhile, the research results of Febrianti et al. (2020) show that green intellectual capital is significant for future stock returns. According to Nurmalasari & Murwaningsari, (2024), green human capital (GHC) is found to have no significant impact on future stock returns (FSR). (Agustina et al., 2024) proves that green intellectual capital has no impact on stock returns. Research by Istiqomah & Adhariani (2017) shows that earnings management has an impact on future stock returns. According to Sugiyanto (2020), intellectual capital has a significant impact on future stock returns. Anggraeni, et al. (2015) have empirically proven that real earnings management has a significant impact on stock returns.

From the results of previous research, there are still many inconsistencies between the independent and dependent variables. Therefore, this study adds a moderating variable, namely information asymmetry. Information asymmetry refers to a situation in which one party in a transaction has more complete or more accurate information than the other party. This information gap can lead to inefficiencies in the market and potentially unfair advantages for companies Akoum, S., & Dridi, (2020). This argument is supported by earlier research by Nariastiti & Ratnadi (2014), which shows that information asymmetry has no impact on future stock returns. This shows that the greater the information asymmetry, the lower the future stock returns that can be achieved. In this study, size (Sari et al., 2021) and leverage are added as control variables (Hocky & Renaldo, 2024). The inclusion of control variables is important because control variables have already been studied by previous researchers. It is expected that this will prevent omitted variables so that biased research results can be avoided.

Based on the above explanation and the differences in the previous research results, the aim of this study is to (1) test the impact of green intellectual capital on future stock returns. (2) The impact of real earnings management on future stock returns. (3) Information asymmetry can mitigate the impact of green intellectual capital on future stock returns. (4) Information asymmetry can mitigate the impact of real earnings management on future stock returns. We hope that the results of this research will shed light on the extent to which the practices and effects of real earnings management and green intellectual capital influence future stock returns. Furthermore, it is hoped that this research can be useful as a reference for further research and as a basis for investment decisions.

2.0 LITERATURE REVIEW

Agency Theory

Agency theory is a theory that explains the existence of a conflict of interest between the management as agents and the owners as principals in a company. The owner as principal will demand all activities or responsibilities from the agent so that he can see the performance and outcome of the management (Jensen & Meckling, 1976). When the agent has more information than the principal and has the ability to act more personally than the principal's interests, this condition is referred to as information asymmetry.

According to Akoum, S., & Dridi, (2020), this information gap can lead to inefficiencies in the market and potentially unfair advantages for companies. According to Scott, (2009), information asymmetry can be categorised into two types depending on how one party has an information advantage over the other, namely (a) Adverse selection is a condition where managers have a deeper understanding of the state of the company compared to shareholders. This information is not disclosed to the shareholders so that it can influence their decisions. (b) Moral hazard occurs when shareholders do not have complete information about the actions or decisions of managers. This circumstance provides managers with the opportunity to take actions that are not in line with shareholders' interests and violate contractual agreements, which is known as earnings management.

Galdipour et al. (2014) divide the reasons for yield management into two categories. (1) Political costs are thought to induce managers to smooth earnings in excess of reported earnings. (2) Efficient contracts may be a reason for manipulating reported earnings because shareholders may demand the dismissal of managers due to low earnings. As a result, managers manipulate earnings by selling depreciated assets, reducing allowances for doubtful accounts, changing estimates and accounting methods, and other means to protect their positions.

According to Roychowdhury (2006), true earnings management is the actions taken by management to achieve desired profit targets that deviate from standard business practices (Wijaya et al., 2023).

Resource Based View Theory

The resource-based theory, which was first presented by Penrose in 1959, states that corporate resources are heterogeneous and not homogeneous. The productive outputs derived from corporate resources create uniqueness and a distinctive identity for each organisation (Kor & Mahoney, 2004). The resource-based view (RBV) approach states that a company that has better resources can also perform better. Therefore, this theory is relevant for green intellectual capital, which comprises three main components: (a) green human capital, i.e. employees' knowledge about sustainability, (b) green structural capital, i.e. infrastructure and organizational processes that support sustainable practices, (c) green relational capital, i.e. relationships with external stakeholders that focus on the environment. Yusoff, et al, (2019).

Signaling theory

Signaling theory explains that financial information acts as a signal that encourages management to present reports that reflect the state of the company with the aim of providing an overview of shareholder welfare (Wahyuningsih, 2007). The information in financial reports is a signal to the market, indicating the existence of certain events that may affect the value of the company. One of the most important signals in financial reports is earnings information, which reflects the prospects for future earnings. This information is very important to users of financial reports as it provides estimates of the company's potential future earnings. Assih and Gudono, (2000). A lack of information reflects high information asymmetry, which causes the market to react negatively and price stocks inappropriately, leading to a decline in stock returns (Lumbantoruan et al., 2021).

Hypothesis Development

Understanding the signaling theory means that the company must be able to manage the resources and capital owned by the RBV. Effective management of resources and capital will affect the company's performance, so management must be able to implement the right management strategies. Currently, companies need to manage their resources and capital by considering environmental aspects, as this will affect the perceptions and views of stakeholders. Thus, it will improve the performance of the company. Research (Wato, 2016) shows that companies with strong green intellectual capital tend to have higher stock returns in the future. According to empirical evidence, green intellectual capital significantly improves firm financial performance and stock returns in Indonesia. This is because it increases operational efficiency, lowers environmental risk, and improves the company's reputation, which draws in additional investors.

According to Sugiyanto and Febrianti's (2021) research, intellectual capital has a positive and significant impact on future stock returns. Technological investments in environmental management and environmental technology, such as environmental training, energy efficiency, and production, can reduce environmental impact and increase operational efficiency. Environmental management system implementation is an effective way to help businesses comply with environmental regulations and reduce environmental risk. This has a direct impact on stock return. By having systems and infrastructure that support keberlanjutan practice, businesses can increase sales and attract more investors, which has a positive impact on stock prices. According to Febrianti et al. (2020), the study's findings indicate that green entelektual capital has a significant impact on future stock returns. Intellectual capital has a major impact on future stock returns, according to Sugiyanto (2020). Based on theoretical frameworks and the results of previous research, this study proposes the following hypothesis:
H1: Green intellectual capital has a favorable impact on future stock returns.

Real earnings management refers to the activities carried out by managers who take inspiration from standard business practices, with the primary goal being to reach the desired level of profit (Cohen & Zarowin, 2010). According to Agency theory, managers have an incentive to maximize their own earnings, which may not align with the owner's goal of maximizing the company's value. Managers might use real earnings management to increase their bonuses or to communicate better work practices to investors.

According to Roychowdhury's (2006) research, Real earnings management can improve a company's performance in the short term, but it also has the potential to lower the company's value over time. Rahman and Hutagaol (2008) have also examined the relationship between earnings management and long-term decline in performance.

The results of Sugiyanto's research, (2020) Earnings management has a significant impact on future stock returns. According to Istiqomah & Adhariani (2017), earnings management has an influence on future stock returns. Anggraeni, S., Nurhayati, (2015) found empirical evidence that real earnings management has a significant impact on stock returns. The surge in market response is reflected in the increase in stock prices at the end of trading. Based on theoretical explanations and previous research findings, the proposed hypothesis is as follows:
H2: Real earnings management has a positive effect on future stock return

The management of resources and capital plays an important role in the company's performance, so management needs to implement effective strategies. Currently, companies need to manage their resources and

capital by considering environmental aspects, as this affects stakeholder perceptions. According to research (Wato, 2016), companies with strong green intellectual capital tend to achieve higher stock returns in the future. Information asymmetry occurs when one party in a relationship possesses more in-depth or more accurate information compared to the other party (Akerlof, 1970). The agency theory states that the difference in interests between managers as agents and shareholders as principals can lead to the emergence of agency costs and information asymmetry.

The study conducted by (Levi, S & Zhang, 2008) emphasizes that the increase in information asymmetry impacts the widening of the spread. This is due to the market's perception that high information asymmetry has the potential to increase investment risk, so changes in stock returns can be represented as a function of information asymmetry. The results of the study (Nariastiti & Ratnadi, 2014) reveal that information asymmetry does not directly impact future stock returns. These findings indicate that the higher the level of information asymmetry, the lower the future stock return generated. Based on the theoretical foundation and previous research findings, the proposed hypothesis is as follows:

H3: Information asymmetry weakens the influence of green intellectual capital on future stock returns.

(Roychowdhury, 2006) revealed that real earnings management practices carried out by managers can show positive company performance in the short term, but have the potential to reduce the company's value in the long term. (Rahman et al, 2008) Research has been conducted on the relationship between earnings management practices and the long-term decline in company performance. (Rahman et al, 2008) state that earnings management conducted by the company affects market performance in the short term, but its ability to predict stock performance in the long term tends to decline.

The agency theory explains that the difference in objectives between managers as agents and shareholders as principals can lead to agency costs and cause information asymmetry. The study results (Levi, S&Zhang, 2008) state that increased information asymmetry affects the width of the spread. The market assesses that high information asymmetry has the potential to increase investment risk, which can then affect changes in stock returns as a function of information asymmetry. According to the study (Nariastiti & Ratnadi, 2014), information asymmetry does not affect future stock returns, which indicates that an increase in information asymmetry can actually decrease future stock returns. Based on the theoretical review and previous research findings, the hypothesis proposed in this study is:

H4: Information asymmetry can weaken the impact of real earnings management on future stock returns.

3.0 METHODOLOGY

Research Design

In this study, secondary data obtained from annual reports and sustainability reports of companies in the consumer non-cyclicals sector listed on the Indonesia Stock Exchange were used. The data analyzed covers a two-year period, namely 2021-2022. The selection of samples was carried out using the purposive sampling method based on the established criteria (Hutahuruk et al., 2024).

Definition and Measurement of Variables

Measurement of variables with content analysis on annual reports and sustainability reports by giving a score of 1 (one) for companies that disclose indicators and a score of 0 (zero) if they do not disclose, which is then presented in the form of an index. Here are the variables used in this study:

Independent variable

Green Intellectual Capital (GIC)

Based on the research (Rachmawati, 2023), intellectual capital is divided into three main components: green human capital, green structural capital, and green relational capital.Measuring green intellectual capital uses 30 indicators consisting of: 5 indicators from green human capital, 6 indicators from green structural capital, and 5 indicators from green relational capital. To obtain the GIC Index, the disclosed amount will be divided by the total of all the criteria that must be disclosed.

$$GIC = (total\ items\ disclosed\ in\ each\ element)/(the\ total\ number\ of\ items\ in\ each\ element)\ x\ 100\%$$

Real earnings management

Real earnings management is the manipulation of a company's profits through the company's real activities (Fadrul et al., 2024). The measurement of real earnings management in this study is conducted using the abnormal cash flow operation approach to observe sales manipulation (Murwaningsari, 2011), which is formulated according to (Roychowdhury, 2006) and (Cohen et al., 2008), as follows:

$$[\![CFO]\!]\_it/[\![TA]\!]\_(it-1) = \alpha\_0 + \alpha\_1\ (1/[\![TA]\!]\_(t-1)\ ) + \alpha\_2\ (S\_it/[\![TA]\!]\_(it-1)\ ) + \alpha\_3\ ([\![\Delta S]\!]\_it/[\![TA]\!]\_(it-1)\ ) + \in\_t$$

Explanation:

REM : Riil earning manajemen,

CFO : Cash Flow Operation Yearit-1
TAt-1 : Total Asset Year t-1

Dependent variable
Future Stock Return
Future Stock Returns (FSR) is the total stock return that will be received in the future. Future Stock Return for a company is an important indicator that reflects market expectations regarding the company's stock performance in the future (Infante et al., 2024). This includes the potential appreciation of stock prices and expected dividends. This return is greatly influenced by the company's performance, economic conditions, and other market factors. The formula used refers to (Uswati & Mayangsari, 2016) and can be calculated as follows:

$$[\![FSR]\!]\_(t+1) = (P\_(t+1) - P\_t + D\_(t+1))/P\_t$$

Explanation: FSRt+1: Stock Returns Period t+1, Pt+1: Stock Price Periodt+1, Pt: Stock Price Periodt. Dt+1: Dividend Periodt+1

Moderating Variable
Information asymmetry
Information asymmetry is a situation where one party possesses information that the other party does not have. Management has more information about the company and is able to predict the company's future conditions. However, the information provided by management to the owners is not entirely complete and not always accurate (Manullang, 2015). Information asymmetry is measured using the information asymmetry measurement by (Machdar et al., 2017) and (Rachmawati, 2021) by approximating the bid-ask spread measured as follows:

$$AI = ([\![ASK]\!]\_it - [\![Bid]\!]\_it)/([\![(ASK]\!]\_it + [\![Bid]\!]\_it)/2)\ x\ 100\%$$

Explanation:
AI : Information Asymmetry
Askit: The highest ASK price of company i stock on day t
Bidit : Price The lowest bid price for the shares of company i on day t
Askit is the highest stock price demand in one year, while BIDit is the lowest stock price offer in one year.

How to Reclassify Moderating Variable
There are four types of moderation variables, one of which is the Pure Moderator, characterized by the insignificance of the moderation variable's influence on the dependent variable, while the interaction between the moderation variable and the dependent variable multiplied shows a significant influence. This means that the pure moderator variable purely functions to interact with the independent variable, but does not act as an independent variable. (2) Quasi Moderator occurs when the moderating variable is proven to have a significant effect on the dependent variable, while the interaction between the moderating variable multiplied by the dependent variable also shows a significant effect. In other words, quasi-moderation is a variable that influences the relationship between independent and dependent variables, while also acting as an independent variable. (3) Moderation Predictor occurs when the statistical test results of the moderation variable on the dependent variable have a significant effect, while the interaction between (the moderation variable multiplied by the dependent variable) does not have a significant effect. This means that the moderating variable functions only as an independent variable in building the analyzed relationship model. 4) Homologiser Moderator occurs when the statistical test results of the moderation variable against the dependent variable are not significantly influential, while the interaction between (the moderation variable multiplied by the dependent variable) does not have a significant influence. this means that the variable has the potential to function as a moderating variable.

Control Variable
Firm Size
Firm Size is measured by converting its total assets into natural logarithm form Rachmawati et al., (2022) using the formula (Fadrul et al., 2023):

UP = Ln (Total Assets)

Leverage
Leverage refers to the extent to which debt is used to finance the Company's assets (Cledy & Amin, 2020). The leverage ratio describes the proportion of funding obtained from third-party debt in the company's operational activities (Renaldo, Octavellyn, et al., 2024). The higher this ratio, the greater the amount of debt used for financing, and the higher the interest costs that the company must bear (Angelia, 2020). Leverage can be calculated as the ratio of the company's debt to the company's assets (Murwaningsari, 2024). Here is the formula to calculate leverage (Renaldo, Febris, et al., 2024).

$$LEV = (Total\ debt)/(Total\ aset)$$

Data Analysis Method

In hypothesis testing, a regression test is used with panel data, which combines cross-section and time series data, using E-Views software. The regression equation used is as follows:

$$FSR = \alpha + \beta1\ (MIH) + \beta2\ (MLR) + \beta3\ (MIH)*(AI) + \beta4\ (MLR)*(AI) + \beta5\ (SIZE) + \beta6\ (LEV) + €$$

Explanation: FSR: Future Stock Return; MIH: Green Intellectual Capital; MLR: Real earnings management; AI: Information asymmetry is; SIZE : Firm Size, LEV: Leverage.

4.0 RESULTS AND DISCUSSION

Results

This study uses a sample consisting of 97 companies in the primary consumer goods sector (consumer non-cyclicals) listed on the IDX during the period 2021-2022 (IDX-IC), resulting in 158 observations. The following presents the descriptive statistics:

Table 1. Descriptive Statistics

Variabel	N	Min	Max	Mean	Std. Dev
FSR	158	-0969	1.196	-0.051	0.331
MIH	158	0.125	1.000	0.611	0.201
MLR	158	-1.762	1.007	0.111	0.629
AI	158	0.000	9.964	2.821	2.200
LEV	158	0.097	0.964	0.467	0.204
UP	158	19.949	32.826	28.633	2.279

Note: FSR: Future Stock Return; MIH: Green Intellectual Capital; MLR: Real earnings management; AI: Information asymmetry; SIZE : Firm Size, LEV: Leverage.

In Table 1, descriptive statistics show that the mean value is smaller than the standard deviation, indicating that the data is homogeneous, with a low level of variation. Meanwhile, future stock return and real earnings management show mean values greater than the standard deviation, indicating a higher level of variability in the data, which is heterogeneous.

The average value of the real earnings management (REM) variable, which is positive, indicates that real earnings management functions to increase profits, with an average of 0.111. For the variable of information asymmetry (Spread), the average value of 2.821 indicates an imbalance of information between the parties involved. On the size variable (Renaldo et al., 2023), the average value of 28.633 indicates that the company has a fairly good capacity in managing its finances.

Table 2. t-Test Results (Individual Test)

$$FSR = \alpha + \beta1\ (MIH) + \beta2\ (MLR) + \beta3\ (MIH)*(AI) + \beta4\ (MLR)*(AI) + \beta5\ (SIZE) + \beta6\ (LEV) + €$$

Variable	Predictions	Coefficients	Prob		Collinearity	
					Tolerance	VIF
Constant		44.630	0.000			
MIH	+	0.021	0.000	*	0.033	1.034
MLR	+	0.400	0.000	*	0.893	1.038
AI		0.055	0.000	*	0.073	1.159
MIH*AI	-	0.008	0.149		0.125	1.043
MLR*AI	-	-0.031	0.001	*	0.280	1.171
LEV		0.010	0.927		0.757	1.073
UP		-1.560	0.000		0.128	1.077
R2		0.999				
Adj R2		0.997				
F stat		0.000				
Durbin Watson		3.941				
Gletser Test		0.05				

Note: FSR: Future Stock Return; MIH: Green Intellectual Capital; MLR: Real earnings management; AI: Information asymmetry; SIZE : Firm Size, LEV: Leverage.

Table 2 shows an Adj R^2 value of 0.997, indicating that 99.7% of the variance in the dependent variable can be explained by the independent variables in the model, while the remaining variance is explained by other

factors not included in the model. The F Stat value of 0.000 indicates that there is at least one significant Variance Inflation Factor (VIF) affecting the independent variables in both models. The results of the classical assumption test for the Variance Inflation Factor indicate that the VIF values for all variables in this study are below 10, which means there is no multicollinearity among the independent variables. The Glejtser test yielded a significance value greater than 0.05 (5%), indicating that the assumption of homoscedasticity is met. Meanwhile, the Durbin Watson test result of 3.941 indicates that Ho is not rejected, which means the assumption of no autocorrelation is met.

From the results of the statistical test, it is known that the coefficients for green intellectual capital and real earnings management are 0.021 and 0.400, respectively. This means that each one-unit increase in green intellectual capital will increase future stock return by 0.021, while each one-unit increase in real earnings management will increase future stock return by 0.044. The coefficients obtained are consistent with the proposed hypothesis, namely that green intellectual capital and real earnings management have a positive influence on future stock returns. Further hypothesis testing yielded a significance value of 0.000, which is less than 0.05 (alpha 5%), thus Ho is rejected. Statistically, it can be concluded that at a 95 percent confidence level, there is a positive influence between green intellectual capital and real earnings management on future stock returns.

The coefficient for green intellectual capital moderated by information asymmetry is 0.08, which means that every one-unit increase in green intellectual capital moderated by information asymmetry will increase future stock return by 0.08 units. Meanwhile, the coefficient for real earnings management moderated by information asymmetry is -0.031, which indicates that each one-unit increase in real earnings management moderated by information asymmetry will reduce future stock return by 0.031 units. These results do not align with the proposed hypothesis, which states that green intellectual capital and real earnings management should weaken the positive impact of information asymmetry on future stock returns. Therefore, further significance tests were conducted. The processing results for green intellectual capital moderated by information asymmetry show a significance value of 0.149, which is greater than 0.10, thus the hypothesis is rejected. Statistically, it can be concluded that information asymmetry does not weaken the positive impact of green intellectual capital on future stock returns. On the contrary, the results for real earnings management moderated by information asymmetry show a significance value of 0.001, which is less than 0.10, thus the hypothesis is accepted. Thus, information asymmetry can weaken the negative impact of real earnings management on future stock returns.

Discussion

H1: Green Intellectual Capital has a positive effect on Future Stock Return

The analysis results show that green intellectual capital contributes positively to future stock returns, which means the hypothesis is accepted. In line with the research (Karyanti & Murwaningsari, 2023), it was found that the disclosure of intellectual capital, including structural components, is positively related to future stock return. The Signaling Theory (Spence, 1973) posits that companies engage in sustainability practices to send positive signals to the market and attract investors. Investment in green intellectual capital can be a positive indicator for investors and the market, showing that the company is committed to sustainability and maintaining good relationships with stakeholders. This will improve the market's view of the company, strengthen investor confidence, and in turn, increase the stock value (Renaldo, Suhardjo, Putri, Juventia, et al., 2021).

Green intellectual capital (GIC) can enhance a company's competitive ability and financial performance, thereby positively influencing future stock return (FSR).The underlying factors are (a) GIC is an intangible asset, encompassing information resources, innovation, and knowledge, and (b) GIC plays a role in raising public awareness about the importance of environmental protection, (c) GIC can help companies align national and international regulations regarding environmental protection. (d) GIC can enhance the sustainable performance of the company. (e) Intellectual capital (IC) can be a source of competitive advantage for the company. (f) GIC can help companies create knowledge-based economic value.

H2: Real Earnings Management has a positive effect on Future Stock Return

Based on the test results, real earnings management has been proven to have a positive impact on future stock returns, which supports the proposed hypothesis. These findings are consistent with the research by (Putri & Fitri,2021) and (Graham et al.,2005), which found that real earnings management affects future stock returns. This is because real earnings management activities do not always attract the attention of auditors and regulators, as they are often carried out through daily operational activities as part of the company's strategy to meet the profit targets desired by investors (Renaldo, Murwaningsari, et al., 2024). When the profit target is achieved, this can attract investors and increase future stock return.

H3: Information Asymmetry cannot weaken the influence of Green Intellectual Capital on Future Stock Return

This study found that information asymmetry affects future stock returns, in line with the research (Verrecchia, 2001), which explains that higher information transparency can reduce information asymmetry and improve market efficiency, thereby impacting stock prices and future stock returns. The results of this study indicate that companies with high information asymmetry are often perceived as having poor performance. On the other hand, companies with low information asymmetry are consistently assessed to have high company performance. Therefore, it can be concluded that information asymmetry significantly affects company performance, which in turn will influence future stock returns.

Information asymmetry as a moderating variable is unable to weaken the influence of green intellectual capital (GIC*AI). This means that information asymmetry together with green intellectual capital is unable to create future stock returns. Referring to the research (Sharma, et al., 1981), the interaction variable (MIH*AI) does not show significance, whereas the moderation variable (information asymmetry) shows significance. This places the moderation variable of information asymmetry in the category of Predictor Moderation, where the variable only functions as a predictor (independent) in the existing relationship model. This happens because green intellectual capital is a factor related to corporate sustainability, so information asymmetry does not affect the strength of the relationship between green intellectual capital and future stock return.

Information asymmetry can weaken the impact of Real Earnings Management on Future Stock Returns

Information asymmetry as a moderating variable can weaken the effect of real earnings management (MLR*AI) on future stock return. Based on (Sharma, et al., 1981), when the interaction variable (MLR*AI) and the moderation variable (information asymmetry) show significant results, this indicates that the moderation variable of information asymmetry falls into the category of full moderation, meaning this moderation variable plays an important role in the relationship formed in the model. This is due to the fact that information asymmetry can increase the greater risk, causing investors to tend to offer a lower price for the company. Thus, it can be explained that (a) information asymmetry arises when one party in a transaction has more information than the other party. (b) This condition can increase uncertainty in transactions, which in turn can lead to market failure. (c) Information asymmetry can cause investors to change their investment decisions regarding the company because they perceive the company as high-risk. (d) Information asymmetry can encourage companies to raise external funds by borrowing rather than issuing common stock. (e) Information asymmetry can cause the cost of capital incurred by the company to increase.

5.0 CONCLUSION

Conclusion

Conclusion of this research: (1) Green Intellectual Capital and Real Earnings Management show a positive influence on Future Stock Return, (2) Information Asymmetry does not reduce the influence of Green Intellectual Capital on future stock return, indicating that Information Asymmetry falls into the category of moderation predictors. On the other hand, Information Asymmetry weakens the influence of Real Earnings Management on future stock return, so Information Asymmetry can be categorized as full moderation. (3) The control variable Leverage does not affect future stock return, while company size has a negative impact on future stock return.

Implications

The implications of this research are (1) The results of this study are expected to deepen the understanding and awareness of the relationship between sustainability and financial performance, which in turn can encourage the creation of a more efficient capital market that is sensitive to environmental issues. (2) It is hoped that this research can encourage companies to pay more attention to the quality of the information presented, in order to enhance stakeholder trust and company performance. This research also emphasizes the importance of building good relationships with stakeholders and efficient environmental management to achieve sustainability goals and company value growth (Wati et al., 2023). (3) Providing valuable information to investors to consider and evaluate risks related to making appropriate investment decisions by examining the track record in the company's portfolio to leverage the potential for higher returns.

Limitations

The limitation of this research is (1) the determination of the score for the green intellectual capital index indicator is subjective, so each researcher may have a different perspective. This may allow certain items expressed by the company to be overlooked. (2) The high Adjusted R Square is due to the fixed effects model assumption, which accounts for individual differences by incorporating intercept differences for each company. The panel data

estimation technique with fixed effects model uses dummy variables to capture the differences in intercepts between companies, which is also known as the Least Squares Dummy Variable (LSDV) method.

Recommendations

Suggestions for this research are (1) The use of dummy variables 0, 1, 2, 3 to address the subjectivity of data collection, with content analysis requiring rechecking by another party. (2) Increasing or expanding the sample size from companies in other sectors, such as the energy, health, or technology sectors, and providing comparisons between these sectors to determine the influence of each variable on different sectors.

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