

The Effect of Biological Asset Intensity, Green Accounting Implementation, and Total Asset Turnover on Financial Performance (A Study of Agricultural Companies Listed on the Indonesia Stock Exchange, 2020–2024)

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ABSTRACT

This study aims to examine and analyze the effects of Biological Asset Intensity, Green Accounting Implementation, and Total Asset Turnover on the Financial Performance of agricultural companies listed on the Indonesia Stock Exchange during 2020–2024. The study employs a quantitative approach using secondary data in the form of audited annual financial statements published on the Indonesia Stock Exchange during the 2020–2024 period. The population consists of 56 agricultural companies. Purposive sampling resulted in 13 companies being selected as the research sample, yielding a total of 65 observations. The analytical method used is panel data regression with the assistance of EViews 12. The results show that: (1) Biological Asset Intensity has a positive effect on Financial Performance; (2) Green Accounting Implementation has a negative effect on Financial Performance; and (3) Total Asset Turnover has a positive effect on Financial Performance.

Keywords: Biological Asset Intensity, Green Accounting Implementation, Total Asset Turnover, Financial Performance.

I. Introduction

Indonesia is the largest agricultural country in Southeast Asia. Its abundant natural resources are strongly supported by favorable geographical conditions. With extensive land resources and fertile soils, Indonesia is one of the world's major producers of various tropical agricultural commodities, which currently serve as a source of income for a large proportion of Indonesian households. Furthermore, with 60.2 million hectares of agricultural land, Indonesia still has substantial untapped agricultural potential (World Bank, 2020). Bukhtiarova et al. (2019) developed an economic model that provides a basis for concluding that the agricultural sector is a highly important factor influencing the overall level of economic development in the countries studied. Among the factor characteristics selected in the final model, the area of agricultural land was found to be the most significant. In addition, Indonesia's plantation sector is also a leading industry globally, particularly in palm oil production. Based on Trade Map data for 2019 and 2023 under HS code 1511, the five largest palm oil-exporting countries collectively accounted for 87% of the total value of global palm oil exports. In 2023, Indonesia and Malaysia ranked as the world's first- and second-largest palm oil exporters, dominating the global palm oil market with shares of 52.55% and 27.60%, respectively (Ministry of Agriculture, 2024).



As a sector that contributes significantly to Indonesia's economic growth, agricultural companies have become an important focus, particularly in terms of reporting and public accountability. From an accounting perspective, this sector involves a distinctive type of asset known as a biological asset. The Indonesian Institute of Accountants (IAI) introduced governance requirements for biological assets through PSAK 241, which was ratified on December 12, 2022, and became effective on January 1, 2024. This relatively new standard fully adopts IAS 41 Agriculture (International Accounting Standard) and contains provisions applicable to agricultural companies, including the disclosure, presentation, measurement, and reporting of biological assets. Biological assets are assets of agricultural companies consisting of living plants or animals that undergo biological transformation through processes such as growth, degeneration, production, and procreation (IAI, 2024).

II. Literature Review and Hypothesis Development

2.1. Biological Asset Intensity and Financial Performance

Agricultural companies have characteristics that differ from those of other sectors because a substantial portion of their assets consists of biological assets. According to PSAK 241 Agriculture, biological assets are living animals or plants that undergo biological transformation in the form of growth, degeneration, production, and reproduction, thereby generating economic benefits for the company. Biological Asset Intensity represents the proportion of biological assets relative to a company's total assets. A higher level of Biological Asset Intensity indicates a greater investment in productive assets used in operational activities. Based on agency theory, management, as the agent, is responsible for managing company resources efficiently and providing relevant information to shareholders. Adequate disclosure of biological assets can reduce information asymmetry between management and investors, thereby increasing confidence in the company's prospects. A high proportion of biological assets also reflects the company's ability to produce agricultural products that constitute its primary source of revenue. Therefore, companies that are able to manage biological assets optimally tend to achieve higher levels of profitability.

Studies by Putri and Rahmawati (2023), Moyo and Phiri (2022), and Almas et al. (2025) show that Biological Asset Intensity has a positive effect on financial performance. These findings indicate that the greater the investment in biological assets that are managed effectively, the greater the company's ability to generate profit. Based on the theoretical foundation and the findings of previous studies, the following hypothesis is formulated.

H1: Biological Asset Intensity has a positive effect on Financial Performance.

2.2. Green Accounting Implementation and Financial Performance

Green Accounting is an accounting system that integrates environmental aspects into business activities through the recognition, measurement, recording, and reporting of environmental costs. The implementation of Green Accounting is intended to strengthen corporate environmental accountability while supporting sustainable development. Green Accounting is implemented through environmental expenditures such as waste management, pollution control, investment in environmentally friendly technologies, and the preparation of sustainability reports. According to stewardship theory, management, as a steward, is responsible for maintaining corporate sustainability not only by increasing profits but also by ensuring sound environmental management. Nevertheless, the implementation of Green Accounting requires relatively substantial investment, which increases a company's operating costs. At the initial stage of implementation, these higher environmental costs may reduce company profits because the economic benefits are not yet realized immediately. Theana et al. (2025) and Putri et al. (2025) found that Green Accounting implementation has a negative effect on financial performance. This condition indicates that, in

the short term, the environmental costs incurred by companies exceed the financial benefits obtained, causing profitability to tend to decline. Accordingly, the second hypothesis in this study is formulated as follows.

H2: Green Accounting Implementation has a negative effect on Financial Performance.

2.3. Total Asset Turnover and Financial Performance

Total Asset Turnover (TAT) is an activity ratio that measures a company's ability to utilize all of its assets to generate sales. This ratio indicates the efficiency with which company assets are used. A higher Total Asset Turnover indicates that the company is more effective in utilizing its total assets to support operational activities and generate revenue. Based on agency theory, efficient asset utilization reflects management's success in managing company resources in accordance with shareholders' interests. Meanwhile, stewardship theory explains that management seeks to maximize the utilization of all company resources in order to achieve organizational goals sustainably. In agricultural companies, the effective utilization of biological and other assets increases the sales volume of agricultural products and consequently improves company profits. Studies by Hasan et al. (2019), Wijayanti and Lestari (2021), and Setiawan et al. (2024) show that Total Asset Turnover has a positive effect on financial performance. The greater the company's ability to utilize its assets to generate sales, the higher its level of profitability, as reflected in Return on Assets (ROA). Based on the above explanation, the third hypothesis is formulated as follows.

H3: Total Asset Turnover has a positive effect on Financial Performance.

2.4. Hypothesis Development

This study analyzes the effects of Biological Asset Intensity (X1), Green Accounting Implementation (X2), and Total Asset Turnover (X3) on Financial Performance (Y), which is proxied by Return on Assets (ROA). Agency theory explains that effective asset management can increase company value through improved profitability. Meanwhile, stewardship theory explains that the implementation of sustainable business practices, including Green Accounting, constitutes a form of management responsibility for maintaining business continuity, even though such practices may increase operating costs in the short term. Based on the theories applied and the findings of previous studies, the research hypotheses are formulated as follows:

H1: Biological Asset Intensity has a positive effect on Financial Performance.

H2: Green Accounting Implementation has a negative effect on Financial Performance.

H3: Total Asset Turnover has a positive effect on Financial Performance.

III. Research Method

This study employs a quantitative approach with an explanatory research design to analyze the effects of Biological Asset Intensity, Green Accounting Implementation, and Total Asset Turnover on the Financial Performance of agricultural companies listed on the Indonesia Stock Exchange (IDX). The study uses secondary data obtained from annual reports and corporate financial statements published on the official website of the Indonesia Stock Exchange (www.idx.co.id) and on the official websites of the respective companies. The population consists of all agricultural-sector companies listed on the Indonesia Stock Exchange during the 2020–2024 period. Purposive sampling was employed using the following criteria: (1) agricultural-sector companies continuously listed on the Indonesia Stock Exchange throughout 2020–2024; (2) companies that issued complete annual reports and financial statements during the study period; (3) companies that disclosed information on biological assets, environmental costs, total assets, sales, and net

income as required for the study; and (4) companies that were not delisted during the study period. Based on these criteria, 13 companies were selected as the research sample, yielding a total of 65 observations.

The dependent variable is Financial Performance, proxied by Return on Assets (ROA). The independent variables consist of Biological Asset Intensity, measured as the proportion of biological assets to total assets; Green Accounting Implementation, proxied by environmental costs; and Total Asset Turnover (TAT), measured as the ratio of net sales to total assets. The operational definitions and measurement of each variable are presented in Table 1. The data were analyzed using panel data regression with EViews 12 software. The analysis included descriptive statistics and panel data model selection using the Chow Test, Hausman Test, and Lagrange Multiplier (LM) Test to determine the most appropriate model among the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). Based on the test results, the Fixed Effect Model (FEM) was selected as the most appropriate model.

Classical assumption tests were subsequently conducted, including normality, multicollinearity, and heteroskedasticity tests, to ensure that the regression model satisfied the required statistical assumptions. Hypothesis testing was performed using a partial t-test to examine the effect of each independent variable on the dependent variable, a simultaneous F-test to examine the joint effect of all independent variables, and the adjusted coefficient of determination (Adjusted R²) to measure the model's ability to explain variations in corporate financial performance.

The panel data regression model used in this study is specified as follows:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_{it}.$$

Where:

- ROA = Return on Assets (Financial Performance)
- α = Constant
- β_1 – β_3 = Regression coefficients
- BAI = Biological Asset Intensity
- GA = Green Accounting Implementation
- TAT = Total Asset Turnover
- ε = Error term
- i = Company
- t = Observation period (2020–2024)

This research method was designed to provide empirical evidence regarding the effects of Biological Asset Intensity, Green Accounting Implementation, and Total Asset Turnover on the Financial Performance of agricultural companies. The findings are expected to contribute to the development of accounting literature, particularly in relation to biological asset management, environmental accounting, and the efficiency of corporate asset utilization.

IV. Results and Discussion

4.1. Research Results

Descriptive Statistics. The descriptive statistics of the research variables are presented in Table 1 below.

Table 1. Descriptive Statistics of the Research Variables

Statistic	X1	X2	X3	Y
Mean	0.035246	21.37737	0.842477	0.018138
Median	0.022000	21.18100	0.677000	0.028000
Maximum	0.111000	26.11200	2.324000	0.205000

Minimum	0.000367	17.31600	0.132000	-0.173000
Std. Dev.	0.030913	2.145575	0.528919	0.079105
Skewness	1.217579	0.320698	0.850985	-0.230450
Kurtosis	3.409485	2.288483	2.844251	2.875144
Jarque-Bera	16.51452	2.485290	7.910932	0.617547
Probability	0.000259	0.288620	0.019150	0.734347
Sum	2.291000	1389.529	54.76100	1.179000
Sum Sq. Dev.	0.061160	294.6236	17.90432	0.400488
Observations	65	65	65	65

The Biological Asset Intensity variable, measured by comparing total biological assets with the company's total assets, shows a minimum value of 0.000367, a maximum value of 0.111000, a mean value of 0.035246, and a standard deviation of 0.030913. The relatively small standard deviation indicates that the Biological Asset Intensity observations are relatively close to the mean. The minimum Biological Asset Intensity value was recorded by PT BISI International Tbk in 2023, while the maximum value was recorded by PT Charoen Pokphand Indonesia in 2021. The Green Accounting Implementation variable, measured using the natural logarithm of the company's environmental costs, shows a minimum value of 17.31600, a maximum value of 26.11200, a mean value of 21.37737, and a standard deviation of 2.145575. The relatively small standard deviation indicates that the Green Accounting Implementation observations are relatively close to the mean. The minimum Green Accounting Implementation value was recorded by PT Jaya Agra Wattie in 2020, while the maximum value was recorded by PT Japfa Comfeed Indonesia in 2022.

The Total Asset Turnover variable, measured as the ratio of sales to the company's total assets, shows a minimum value of 0.132000, a maximum value of 2.324000, a mean value of 0.842477, and a standard deviation of 0.528919. The relatively small standard deviation indicates that the Total Asset Turnover observations are relatively close to the mean. The minimum Total Asset Turnover value was recorded by PT Jaya Agra Wattie in 2020, while the maximum value was recorded by PT Malindo Feedmill in 2024. The Financial Performance variable, measured using Return on Assets, namely the ratio of net income to total assets, shows a minimum value of -0.173000, a maximum value of 0.205000, a mean value of 0.018138, and a standard deviation of 0.079105. The minimum Financial Performance value was recorded by PT Jaya Agra Wattie in 2023, while the maximum value was recorded by PT Bakrie Sumatera Plantations in 2022.

a. Panel Data Regression Model Selection

1) Chow Test

In panel data regression, this test is used to determine which model is more appropriate, the Common Effect Model or the Fixed Effect Model.

Table 2. Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	7.323388	(12,49)	0.0000
Cross-section Chi-square	66.773791	12	0.0000

Based on the results above, the probability value of the cross-section F is 0.0000, which is less than 0.05. Therefore, the Fixed Effect Model is more appropriate than the Common Effect Model for explaining the research results.

2) Hausman Test

This test is used to determine the more appropriate method between the Fixed Effect Model and the Random Effect Model.

Table 3. Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	22.010578	3	0.0001

Based on the Hausman test results obtained using EViews, the probability value of the cross-section random statistic is $0.0001 < 0.05$. Therefore, the Fixed Effect Model was selected as the most appropriate model for the subsequent regression analysis.

b. Classical Assumption Tests

1) Normality Test

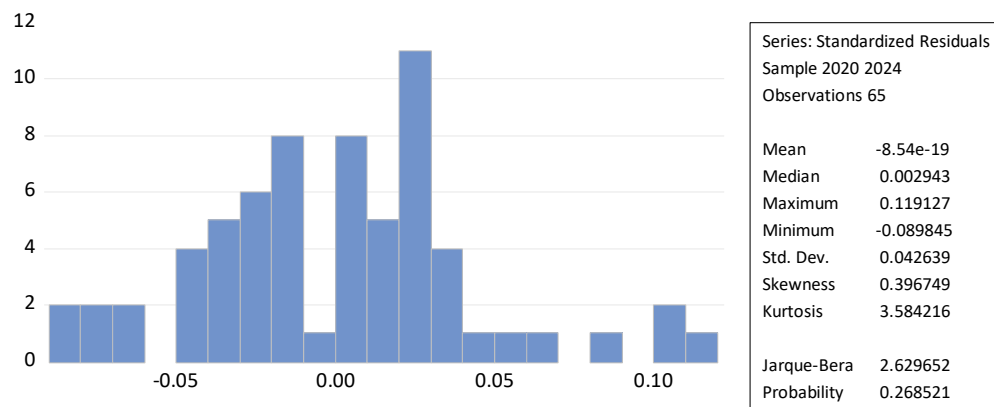


Figure 1. Normality Test Results

The normality assumption states that the population from which samples are drawn follows a normal distribution. In linear regression analysis, a fundamental assumption is that the residuals are normally distributed (Tsagris & Pandis, 2021). Based on the data processing results, the probability value is $0.268 > 0.05$. This indicates that the data are normally distributed, and the regression analysis can therefore proceed.

2) Multicollinearity Test

Table 4. Multicollinearity Test Results

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.004211	48.81273	NA
X1	0.271390	6.868692	2.957993
X2	1.02E-05	50.93511	1.051494
X3	0.000954	10.89197	3.045050

Multicollinearity occurs when a regression model includes several variables that are significantly correlated not only with the dependent variable but also with one another (Young, 2017). Based on the table above, the centered Variance Inflation Factor (VIF) values for X1, X2, and X3 are 2.95, 1.05, and 3.04, respectively. All values are below 10, indicating that multicollinearity is not present in the research model.

3) Heteroskedasticity Test

Table 5. Heteroskedasticity Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.044638	0.086519	0.515936	0.6082

X1	-0.375586	0.636260	-0.590302	0.5577
X2	-0.000458	0.004058	-0.112759	0.9107
X3	0.013593	0.025932	0.524185	0.6025

Based on the table above, the probability values for X1, X2, and X3 are $0.557 > 0.05$, $0.910 > 0.05$, and $0.602 > 0.05$, respectively. Therefore, there is no evidence of heteroskedasticity.

c. Panel Data Regression Analysis

Table 6 Panel Data Regression Analysis Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.139828	0.150475	0.929243	0.3573
X1	2.403488	1.106598	2.171961	0.0347
X2	-0.015967	0.007058	-2.262228	0.0282
X3	0.160169	0.045102	3.551251	0.0009

Based on the table above, the regression equation can be formulated as follows:

$$Y_{it} = 0.139 + 2.403X_{1it} - 0.015X_{2it} + 0.160X_{3it} + \varepsilon_{it}$$

The constant value of 0.139 indicates that if Biological Asset Intensity, Green Accounting Implementation, and Total Asset Turnover are all equal to zero, Financial Performance (ROA) is 0.139. In other words, when a company has no biological asset intensity, does not implement Green Accounting, and has no asset turnover, its ROA remains at 0.139. The positive constant indicates that even in the absence of these three independent variables, the company still has a certain level of financial performance, suggesting that other factors outside the model also influence Financial Performance. The coefficient of Biological Asset Intensity is 2.403 and has a positive effect on Financial Performance, as indicated by its positive sign. This means that a one-unit increase in Biological Asset Intensity increases Financial Performance (ROA) by 2.403 units. Conversely, a one-unit decrease in Biological Asset Intensity decreases Financial Performance by 2.403 units.

The coefficient of Green Accounting Implementation is -0.015 and has a negative effect on Financial Performance, as indicated by its negative sign. This means that a one-unit increase in Green Accounting Implementation decreases Financial Performance (ROA) by 0.015 units. Conversely, a one-unit decrease in Green Accounting Implementation increases Financial Performance by 0.015 units. The negative coefficient indicates that, in this research model, a higher level of Green Accounting implementation tends to be accompanied by a lower ROA. The coefficient of Total Asset Turnover is 0.160 and has a positive effect on Financial Performance, as indicated by its positive sign. This means that a one-unit increase in Total Asset Turnover increases Financial Performance (ROA) by 0.160 units. Conversely, a one-unit decrease in Total Asset Turnover decreases Financial Performance by 0.160 units. This finding indicates that the more effectively a company utilizes its total assets to generate sales, the higher its financial performance as measured by ROA.

d. Hypothesis Testing

1) Partial Test

Table 7. Partial Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.139828	0.150475	0.929243	0.3573
X1	2.403488	1.106598	2.171961	0.0347
X2	-0.015967	0.007058	-2.262228	0.0282

X3	0.160169	0.045102	3.551251	0.0009
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The probability value for Biological Asset Intensity (X1) is $0.0347 < 0.05$, and X1 has a calculated t-value (t-statistic) of $2.171961 > \text{the critical t-value of } 1.67065$; therefore, H1 is accepted. It can therefore be concluded that Biological Asset Intensity has a positive partial effect on Financial Performance. The probability value for Green Accounting Implementation (X2) is $0.0282 < 0.05$, and the absolute calculated t-value (t-statistic) for X2 is $2.262228 > \text{the critical t-value of } 1.67065$; therefore, H2 is accepted. It can therefore be concluded that Green Accounting Implementation has a negative partial effect on Financial Performance. The probability value for Total Asset Turnover (X3) is $0.0009 < 0.05$, and the absolute calculated t-value (t-statistic) for X3 is $3.551251 > \text{the critical t-value of } 1.67065$; therefore, H3 is accepted. It can therefore be concluded that Total Asset Turnover has a positive partial effect on Financial Performance.

2) Simultaneous Test

Table 8. Simultaneous Test Results (R^2)

Statistic	Value	Statistic	Value
R-squared	0.704785	Mean dependent var	0.018138
Adjusted R-squared	0.614414	S.D. dependent var	0.079105
S.E. of regression	0.049121	Akaike info criterion	-2.979327
Sum squared resid	0.118230	Schwarz criterion	-2.444094
Log likelihood	112.8281	Hannan-Quinn criter.	-2.768143
F-statistic	7.798730	Durbin-Watson stat	2.272568
Prob(F-statistic)	0.000000		

Based on the table above, the probability value of the F-statistic is $0.000000 < 0.05$, and the calculated F-value (F-statistic) is $7.798730 > \text{the critical F-value of } 2.755$. Based on these results, the simultaneous effect of X1, X2, and X3 is positive, consistent with the positive F-statistic value. It can therefore be concluded that Biological Asset Intensity (X1), Green Accounting Implementation (X2), and Total Asset Turnover (X3) have a positive simultaneous effect on Financial Performance.

e. Coefficient of Determination Test (R^2)

Table 9. Coefficient of Determination Test Results (R^2)

Statistic	Value	Statistic	Value
R-squared	0.704785	Mean dependent var	0.018138
Adjusted R-squared	0.614414	S.D. dependent var	0.079105
S.E. of regression	0.049121	Akaike info criterion	-2.979327
Sum squared resid	0.118230	Schwarz criterion	-2.444094
Log likelihood	112.8281	Hannan-Quinn criter.	-2.768143
F-statistic	7.798730	Durbin-Watson stat	2.272568
Prob(F-statistic)	0.000000		

The Adjusted R-squared value of 0.61 indicates that 61% of the variation in Financial Performance can be explained by Biological Asset Intensity, Green Accounting Implementation, and Total Asset Turnover. The remaining 39% is explained by one or a combination of other independent variables not included in this study. According to Sugiyono (2017), a coefficient value within the interval of 0.60–0.799 indicates a strong coefficient of determination.

4.2. Discussion

The Effect of Biological Asset Intensity on Financial Performance. Based on the probability value obtained from the Fixed Effect Model, Biological Asset Intensity affects Financial Performance. The partial t-

test results and regression coefficient indicate that the direction of the effect of Biological Asset Intensity on Financial Performance is positive. This means that the higher the proportion of biological assets held by an agricultural company, the better its ability to manage and utilize its asset resources to generate profit and maintain business continuity. Economically, the findings indicate that companies with substantial investment in biological assets, such as productive plants, livestock, or agricultural commodities classified as biological assets under PSAK 241, are able to manage and utilize these assets effectively, resulting in higher profitability. This finding is consistent with the characteristics of biological assets, which are used as core products by agricultural companies to generate profit. Agricultural products constitute one of the most significant components of inventory in agricultural entities. Agricultural produce is a current asset that may be used in an organization's ordinary activities, such as pet food or planting materials, processed further, such as grain used for flour production, or sold as a finished product (Shumakova et al., 2016). The findings indicate that increased sales of products generated from the management of biological assets increase company profits.

The findings are also supported by agency theory, which states that the disclosure of accounting information, including the presentation of biological assets in financial statements, can reduce information asymmetry between managers and owners, lower agency costs, and improve company performance (Jensen & Meckling, 2012). In this context, investors who finance a business are provided with access to information about its resources and operations. Consequently, companies are expected to disclose their biological assets. When biological asset intensity is high, companies expect to derive benefits from those assets. Therefore, the greater the disclosure of biological assets, the stronger the representation of biological asset intensity in the financial statements (Almas et al., 2025). An increase in Biological Asset Intensity is accompanied by an increase in the information presented in the financial statements. Information on biological assets is important to users of financial statements because it reflects the company's potential economic benefits, particularly in the agricultural sector, and may influence investors' assessments of the company's financial performance. Ultimately, such information can strengthen investors' confidence to invest capital that supports the company's operations. Therefore, the higher the Biological Asset Intensity, the greater its effect on the company's financial performance. These findings are consistent with Putri and Rahmawati (2023) and Moyo and Phiri (2022), who found that Biological Asset Intensity has a positive effect on Financial Performance.

The Effect of Green Accounting Implementation on Financial Performance. Based on the probability value obtained from the Fixed Effect Model, Green Accounting Implementation affects Financial Performance. The partial t-test results and regression coefficient indicate that the direction of the effect of Green Accounting Implementation on Financial Performance is negative. This means that as Green Accounting Implementation increases, as proxied by higher environmental costs, the company's ability to manage and utilize its resources to generate profit and maintain business continuity tends to decline in the short term. This decline in financial performance occurs because companies must incur additional costs for waste treatment, environmentally friendly technologies, compliance with environmental regulations, and sustainability reporting, which increase operating expenses and reduce short-term profitability. Stakeholder legitimacy is insufficient to offset these short-term expenditures, resulting in lower profitability. Although environmental expenditures may function as long-term sustainability investments, they do not yet generate immediate financial returns (Theana et al., 2025). Companies that demonstrate strong environmental stewardship tend to attract more environmentally conscious investors, thereby increasing demand for their shares and ultimately enhancing company value (Wang et al., 2017). According to stewardship theory, managers acting as stewards tend to make decisions oriented toward the company's long-term sustainability, including the implementation of Green Accounting. However, such implementation often entails substantial environmental costs that negatively affect financial performance in the short term. Environmental costs may reduce profitability because the benefits of incurring such costs are not always realized immediately; their effects may only become evident in the following year or even several years later (M. Putri et al., 2025).

Therefore, within the 2020–2024 observation period used in this study, the benefits of Green Accounting implementation may not yet have been fully internalized or reflected in the companies' financial performance indicators. During this period, companies were likely still in the implementation stage of

environmental policies that required relatively large expenditures, including waste management costs, investments in environmentally friendly technologies, and environmental responsibility disclosures. The accumulation of these costs directly increased operating expenses and potentially reduced short-term profitability. Consequently, the empirical relationship observed between Green Accounting and financial performance during 2020–2024 tends to be negative, reflecting short-term cost effects more strongly than long-term economic benefits that have not yet been fully realized. These findings are consistent with Theana et al. (2025) and M. Putri et al. (2025). The Effect of Total Asset Turnover on Financial Performance. Based on the probability value obtained from the Fixed Effect Model, Total Asset Turnover affects Financial Performance. The partial t-test results and regression coefficient indicate that the direction of the effect of Total Asset Turnover on Financial Performance is positive. This means that the greater the ability of agricultural companies to manage their assets, particularly biological assets used to produce agricultural products that can be sold directly, the greater their ability to generate profit. This indicates that the efficiency with which agricultural companies utilize biological assets, many of which are associated with current operating assets, plays an important role in improving financial performance. When a company is able to utilize all of its assets optimally to generate sales, its revenue also tends to increase, ultimately leading to higher profits.

According to PSAK 241, biological assets are fundamentally living animals or plants that undergo biological transformation. However, once the output from those assets has been harvested, it is classified as agricultural produce and subsequently treated as inventory. In this context, agricultural produce held as inventory refers to harvested output that no longer undergoes a biological process and is ready to be sold or processed further in the company's operations, such as fresh fruit bunches of oil palm, harvested food crops, milk, or harvested timber. These products constitute the primary source of sales for agricultural companies and are classified under inventory accounts in the financial statements. When sales of agricultural products proceed effectively, company performance improves because the primary operations of agricultural companies are supported by the sale of agricultural products. This is consistent with the view that improved inventory management efficiency is positively correlated with financial performance, measured as return on operating assets (Gołaś, 2020). The positive relationship between Total Asset Turnover and financial performance can be explained through agency theory, in which efficient asset management by managers reflects the agent's success in performing management functions that are aligned with the principal's interests while minimizing potential agency conflicts arising from suboptimal use of resources. Within agency theory, higher internal ownership appears to align the interests of management and shareholders more closely and is positively associated with a higher level of asset utilization efficiency, reflecting lower agency costs (M. Singh & Ili, 2003). In addition, stewardship theory (Davis, 1997) states that managers acting as stewards pursue the company's long-term interests by managing assets and resources efficiently and sustainably. In agricultural companies, such asset management includes the way management handles the sale of agricultural products. These findings are consistent with Wijayanti and Lestari (2021), Hasan et al. (2019), and Setiawan et al. (2024).

V. Conclusion

Based on the analysis and discussion, it can be concluded that Biological Asset Intensity affects Financial Performance; therefore, the first hypothesis is accepted. The partial test results indicate that the direction of the effect is positive. This means that the higher the proportion of biological assets held by an agricultural company, the better its ability to manage and utilize its asset resources to generate profit and maintain business continuity. The study also finds that Green Accounting Implementation affects Financial Performance; therefore, the second hypothesis is accepted. The partial test results indicate that the direction of the effect is negative. This means that as Green Accounting Implementation increases, as proxied by higher environmental costs, the company's ability to manage and utilize its financial resources to generate profit may decline in the short term. In addition, the analysis shows that Total Asset Turnover affects Financial Performance; therefore, the third hypothesis is accepted. The partial test results indicate that the direction of the effect is positive. This means that the greater the ability of agricultural companies to manage their assets, particularly biological assets used to produce agricultural products that can be sold directly,

the greater their ability to generate profit.

Theoretically, this study reinforces the relevance of agency theory and stewardship theory in explaining the relationship between asset management, environmental policies, and the financial performance of agricultural companies. Practically, the findings provide empirical evidence that Biological Asset Intensity and asset utilization efficiency, as measured by Total Asset Turnover, are important factors in improving company profitability because both reflect management's ability to optimize company resources. On the other hand, Green Accounting Implementation indicates that a commitment to environmental responsibility does not necessarily generate positive financial effects in the short term because high implementation costs continue to burden company operations. Therefore, companies that are able to balance efficient asset management with long-term sustainability strategies are more likely to achieve stable and sustainable financial performance.

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