Quest Journals
Journal of Research in Business and Management
Volume 13 ~ Issue 5 (May 2025) pp: 16-19
ISSN(Online):2347-3002
www.questjournals.org

Research Paper

Optimizing Return on Assets (ROA) of Agricultural Sector Companies by Considering Interest Rate and Financial Leverage Factors

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Abstract
This study aims to determine the effect of Interest Coverage Ratio, Debt to Equity Ratio and Interest Rate of Return on Assets on Agriculture Sector in Indonesia Stock Exchange. This study used secondary data, with samples 9 agricultures companies in Indonesia Stock Exchange during the study period 2018-2022. Independent variables in this study are of Interest Coverage Ratio, Debt to Equity Ratio and Interest Rate of Return on Assets. This study used purposive sampling technique. The method of data analysis used classical assumption test, hypothesis test, multiple regression analysis, the F test and t test. Based on results of the study, only Interest Coverage Ratio have no significant effect on Return on Assets. Meanwhile, the F test result shows that of Interest Coverage Ratio, Debt to Equity Ratio and Interest Rate jointly have effect on Return on Assets.

Keywords: *Interest Coverage Ratio, Debt to Equity Ratio, Interest Rate, Return on Assets*

R*eceived 01 May., 2025;* ***R****evised 06 May., 2025;* ***A****ccepted 08 May., 2025 © The author(s) 2025.*
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I. Introduction

Food crisis is not just a new issue or phenomenon that occurs in the world. The food crisis that occurred in the 1970s was due to a combination of several factors such as climate change, bad weather, geopolitical conflicts, oil price spikes, high population growth and ineffective government policies. Most of the food crisis was experienced by developing countries where there was an increase in people who were hungry and malnourished.

Based on Government Regulation (PP) Number 17 of 2015 concerning Food and Nutrition Security, (2015), food and nutrition security is a condition where food and nutrition needs are met for the country down to individuals, which is reflected in the availability of sufficient food, both in quantity and quality, safe, diverse, fulfilling nutritional needs, evenly distributed and affordable, and not in conflict with religion, beliefs, and culture of the community to realize good nutritional status in order to live healthily, actively, productively and sustainably.

The increase in demand results in increased competition between companies. This encourages each company to be able to maintain its position and be able to compete on the stock exchange. The success of a company's performance can be measured by the company's ability to increase profits from asset management. Return On Assets (ROA) is one of the profitability ratios used to measure the level of profit and reflects the ability of asset management carried out by the company. The high or low return on assets is influenced by several factors such as working capital(Sah, 2023). Working capital elements include cash, receivables, inventory and current liabilities. From each working capital element, its turnover rate can be calculated. The faster the turnover rate of each element, the better or more efficient it can be said.

Profitability can be measured by financial leverage, this is an important concern for financial managers as a result of the major developments experienced by the financial market (Zaher, 2020). Difficult decision making by a manager is on financial leverage, because an increase in the debt ratio can increase financial risk and result in an increase in the cost of capital (Noghondari&Noghondari, 2017). Thus, companies must be able to utilize financial resources to achieve the expected profitability (Zaher, 2020).

This study was conducted to analyze how to optimize Return on Assets (ROA) by considering interest rate factors and financial leverage of agricultural sector companies on the Indonesia Stock Exchange for the 2018-2022 period.

II. Literature Review

Business Sustainability Theory

Business sustainability is the success of a business to survive and be real in the long term and have strong competitiveness. Business sustainability theory is an approach that integrates environmental, social, and economic aspects into a company's strategy and operations. The goal is to create sustainable value, not only for the company itself but also for stakeholders and the environment. According to (Elkington, 1997). this concept is known as the triple bottom line, which emphasizes the importance of considering three pillars: planet, people, and profit. The term triple bottom line (TBL) refers to a framework that evaluates a company's success not only from a financial aspect, but also from its impact on the environment and society (Dari, 2024).

Profitability Theory

According to Mamun (2020), "Profitability ratio is a ratio to assess a company's ability to seek profit". This ratio also provides a measure of the level of effectiveness of a company's management. This is indicated by the profit generated from sales and investment income. Basically, the use of this ratio is to show the level of efficiency of a company.

Leverage Trade Off Theory

The level of debt financing of a company can be measured by using Leverage. The use of debt in a company will be at risk of interest costs which are a burden that must be paid by the company. The greater the leverage value of the company, the higher the interest costs on debt that must be paid by the company, as a result the value of the company decreases (Etty et al., 2020).

III. Research Methodology

This study is a causal study that aims to determine the effect of independent variables on dependent variables with quantitative studies. The population of this study is all agricultural companies listed on the Indonesia Stock Exchange (IDX). The research sample is 9 companies. Secondary data in this study were collected from the company's annual financial reports obtained from the Indonesia Stock Exchange (IDX).

In this study, the data used is panel data. This panel data regression test is used to determine the relationship between independent variables consisting of interest rates and financial leverage.The panel fund regression model in this study is as follows:

$$ROAit = \alpha + \beta 1SBIit + \beta 2DERit + \beta 3ICRit + eit$$

Table 1. Definition of Research Instruments

Variables	Definition	Measurement
Return On Assets (ROA)	According to Eduardus (2010), ROA describes the extent to which a company's assets can generate profits.	$\frac{Earning\ After\ Tax}{Total\ Assets}$
Interest Rate (SBI)	Interest rate is the price paid for a unit of currency borrowed over a certain period of time. (Lipsey, Ragan, and Courant, 1997)	US$ to Rupiah exchange rate
Debt to Equity Ratio (DER)	*Debt to Equity Ratio*(DER) is the percentage of liabilities in the company's capital structure. (Sukamulja, 2017)	$\frac{Total\ Debt}{Total\ Equity}$
Interest Coverage Ratio (ICR)	Interest coverage ratios are designed to measure a company's ability to pay off financial expenses for a certain period (Horne & Wachowicz, 2009)	$\frac{Earning\ Before\ Interest\ and\ Tax}{Interest\ Expenses}$

The data analysis stage to analyze the research data requires a proper model specification test to choose one of the three approaches (Amyulianthy& Elsa, 2016). First, choose between the Common Effect Model vs Fixed Effect Model, by choosing which model is more suitable between the two, namely by using the Chow Test (limited F Test). Second, choose between the Fixed Effect Model vs Random Effect Model, namely choosing which model is more suitable between the two, by using the Hausman Test. Third, choose between the Common Effect Model vs Random Effect Model, by choosing which model is more suitable between the two, namely by using the Lagrange Multiplier Test (LM Test).

After selecting the right model, it is continued with the classical assumption test, namely the normality test, multicollinearity test, heteroscedasticity test and autocorrelation test. After the classical assumption test stage, it is continued with statistical tests including the determination coefficient test, simultaneous test, and partial test.

IV. Research Results and Discussion

Hypothesis Testing and Model Selection

Before conducting a hypothesis test, it is necessary to choose the right model from the panel data test using the Chow Test, Hausman Test, and LM Test. Based on the model selection test in this study, the best model is the Random Effect Model (REM). If the best model selection results use a random effect model, then there is no need to conduct a Classical Assumption Test. This refers to Gujarati & Porter (2009) in Kosmaryati et al., (2019) which states that the panel data estimation method of the random effect model is a model that uses the generalized least square (GLS) method.

Table 2. Simultaneous Test

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	0.163189	0.047326	3.448167	0.0013
ICR	3.93E-06	5.35E-06	0.733452	0.4675
DER	-0.004119	0.002055	-2.233976	0.0499
SBI	-3.246606	0.941701	-3.447599	0.0013
F-Statistic	4.864195			
Adj. R Square	0.208528			

Based on the results of the simultaneous test (F test), the independent variables simultaneously affect the dependent variable with a sig value of 0.005508 <0.05. Therefore, it can be concluded that there is a significant influence between interest rates and financial leverage on return on assets (ROA). Based on the partial test (T test), it can be identified that ICR has a positive but insignificant effect on the company's ROA with a sig value of 0.4675> 0.05 and a t-count of 0.733452. The DER and SBI variables have a significant negative effect on ROA with a sig value of DER 0.0499 <0.05 (t-count of 2.233976) and a sig value of SBI 0.0013 <0.05 (t-count -3.447599).

The Effect of Interest Coverage Ratio (ICR) on Return on Assets (ROA)

Based on the research results, the interest coverage ratio (ICR) has a positive but insignificant effect on the return on assets (ROA) of agricultural sector companies listed on the Indonesia Stock Exchange for the 2018-2022 period. This means that the company's coverage in paying interest costs does not affect the company's ability to gain profits from asset management. The results of this study are in line with research conducted by Marviah (2021), where the interest coverage ratio does not have a significant effect on financial performance. This finding does not empirically support the leverage theory used in this study.

The Effect of Debt to Equity Ratio (DER) on Return on Assets (ROA)

Based on the research results, the debt to equity ratio (DER) has a significant negative effect on the return on assets (ROA) of agricultural sector companies listed on the Indonesia Stock Exchange for the 2018-2022 period. The results of this study are consistent with research conducted by Amalina (2023) which states that the debt to equity ratio (DER) has a negative and significant effect on return on assets (ROA). Debt to Equity Ratio to Return on Assets has a relationship, where the more debt a company has, the lower the probability value (Rouf, 2018). This proves that with capital through external parties, it gives hope to external parties to obtain large results. However, with the large amount of capital from external parties, it also carries a large risk (Rouf, 2018).

The Effect of Interest Rates on Return on Assets (ROA)

Based on the research results, interest rates have a significant negative effect on the return on assets (ROA) of agricultural sector companies listed on the Indonesia Stock Exchange for the 2018-2022 period. This means that an increase in interest rates will have an impact on decreasing company profits. This is due to an increase in loan interest costs so that companies tend to postpone or reduce their expansion projects due to more expensive financing costs. The results of this study are reinforced by research conducted by (Alim, 2014) stating that interest rates have a negative and significant effect on return on assets (ROA) and research (Oktavia, 2018) also stating that interest rates have a negative and significant effect on return on assets (ROA).

The Influence of Interest Coverage Ratio (ICR), Debt to Equity Ratio (DER) and Interest Rates on Return on Assets (ROA)

Based on the research results, the interest coverage ratio (ICR), debt to equity ratio (DER) and interest rates have a significant effect on the return on assets (ROA) of agricultural sector companies listed on the Indonesia Stock Exchange for the 2018-2022 period. This shows that return on assets (ROA) can be jointly explained by the interest coverage ratio (ICR), debt to equity ratio (DER) and interest rates. Changes in the interest coverage ratio (ICR), debt to equity ratio (DER) and interest rates will affect the profits obtained by the company from managing its assets. The results of this study support the research conducted by Amalina (2022) where financial leverage affects financial performance as proxied by return on assets (ROA).

V. Conclusion

Based on the results of the study on optimizing return on assets by considering financial leverage and interest rates in agricultural sector companies listed on the Indonesia Stock Exchange for the 2018-2022 period, it can be concluded:

1. Interest coverage ratio (ICR) has a positive but insignificant effect on return on assets (ROA)
2. Debt to equity ratio (DER) has a significant negative effect on return on assets (ROA)
3. Interest rates have a significant negative effect on return on assets (ROA)
4. Interest coverage ratio (ICR), debt to equity ratio (DER) and interest rates together have a significant effect on return on assets (ROA)

The recommendations that can be given are that companies must pay attention to the management of financial leverage and macroeconomic conditions that will affect the optimization of their profitability.

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