

## The Effect of Solvency on Profitability (Analysis Study on Manufacturing Companies in the Textile and Garment Sub-Sector Listed on the Indonesia Stock Exchange for the 2015-2019 Period)

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ARTICLE INFO	ABSTRACT
<p><b>Keywords:</b> Debt to Asset Ratio (DAR); Debt to Equity Ratio (DER); Long-term Debt to Equity Ratio (LDER); Return on Assets (ROA); Return on Equity (ROE).</p>	<p><i>This study aims to analyze the effect of profitability on solvency. based on secondary data in the form of annual financial reports using the sample method purposive sampling and multiple linear regression analysis method. This study consists of Debt to Asset Ratio (DAR), Debt to Equity Ratio (DER), and Long-term Debt to Equity Ratio (LDER) on solvency and Return on Assets (ROA) and Return on Equity (ROE) on profitability. The results can be concluded that solvency has an effect on profitability. The multiple linear regression analysis method is utilized to determine the relationships between these variables. The study's findings indicate a significant impact of solvency on profitability, highlighting how the management of debts and long-term liabilities influences a company's ability to generate returns. Additionally, this research underscores the importance of maintaining a balanced financial structure to achieve optimal profitability. By bridging the gap between solvency and profitability, the study provides valuable insights for stakeholders in decision-making processes related to financial planning and corporate strategies. These findings have practical implications for financial managers, as they emphasize the critical role of efficient solvency management in enhancing profitability and ensuring sustainable growth for organizations in competitive markets.</i></p>

### INTRODUCTION

In terms of managing its operations, companies need financial balance to meet company goals amidst tight competition. Capital in a company includes how to obtain, provide, and use it in the most effective and efficient way. Financial managers in a company need to know the elements that affect capital, both from the turnover and the structure of the capital itself. Solvency shows the use of sources of funds with fixed costs as a basis for management in order to gain profit. While profitability is a series of final results of a company's operations that can show a company's ability to optimize profits ((Hanafi & Halim, 2016)). Based on research by (Astuti et al., 2015)) DAR on ROE has a positive and significant effect, while research by (Wahyuni, 2012)) and (Jannati, 2014)) has a negative effect. Research between DAR and ROA conducted by (Widiyanti & Elfina, 2015)) has a negative and insignificant effect, in contrast to (Novak Babič et al., 2017)) which have a positive and significant influence. Research between DER and ROE by (Astuti et al., 2015)) and (Jannati, 2014)) produced a significant positive effect. Research on DER and ROA by (Shahnia et al., 2020) had a positive and significant effect. Research by (Kamal, 2016)) produced a positive but insignificant effect between DAR and ROA. Likewise, research by (Mujtahidah & Laily, 2016)) also had a positive but insignificant effect between DER and ROE. Based on research by (Mujtahidah & Laily, 2016)), LDER has a positive and significant influence on ROA and ROE, while (Jannati, 2014)) research found that LDER has a negative influence on ROE. Armed with differences in previous research, it is necessary to conduct further research on the relationship between the solvency ratio and the profitability ratio.

The relationship between solvency and profitability ratios has been extensively studied, yielding varied results across different industries and contexts. For instance, (Rahman, 2017)) analyzed food industrial companies listed on the Amman Bursa and found no significant relationship between solvency ratios—such as debt-to-asset and debt-to-equity ratios—and profitability metrics like gross profit margin and operating cash flow margin (Hadj Ameer, 2022) Conversely, a study focusing on pharmaceutical companies in Iran identified a statistically significant positive relationship between liquidity ratios and solvency ratios, while noting a negative relationship between profitability ratios and the debt-to-asset ratio (Mohammed et al., 2024) These discrepancies suggest that the impact of solvency on profitability may be industry-specific, influenced by unique operational and financial structures.

Further research underscores the complexity of this relationship. An analysis of commercial banks listed on the Amman Stock Exchange between 2016 and 2020 revealed that liquidity and solvency ratios, as measured by indebtedness ratios, significantly affect profitability indicators.(Nawayiseh et al., 2024)Additionally, the application of accounting ratios, including liquidity, solvency, activity, and profitability ratios, provides a comprehensive view of a company's financial health, aiding in performance assessment and decision-making processes(Ahmed, 2023)These findings highlight the necessity for sector-specific studies to fully understand the dynamics between solvency and profitability, as generalizations across industries may not capture the nuanced interactions present in different economic sectors.

The interplay between solvency and profitability ratios continues to be an area of exploration in financial management. Recent studies have shown that debt-to-equity and debt-to-asset ratios can significantly influence a company's return on equity (ROE) and return on assets (ROA), depending on the industry and economic environment ((Raza, 2021).

While numerous studies have investigated the relationship between solvency and profitability across various industries, the specific dynamics within the manufacturing sector, particularly in the textile and garment sub-sector in Indonesia, remain underexplored. Previous research often yielded mixed findings; some highlighted a significant positive impact of solvency ratios such as Debt to Asset Ratio (DAR) and Long-term Debt to Equity Ratio (LDER) on profitability metrics like Return on Assets (ROA) and Return on Equity (ROE), while others found negative or insignificant correlations. These inconsistencies suggest the need for further investigation, particularly using updated and industry-specific data, to provide a more comprehensive understanding of how solvency influences profitability in this unique sector.

This study introduces a novel approach by focusing exclusively on manufacturing companies in the textile and garment sub-sector listed on the Indonesia Stock Exchange for the 2015–2019 period. By incorporating multiple solvency and profitability ratios such as DAR, DER, LDER, ROA, and ROE, the research provides a holistic view of financial performance in this niche industry. Additionally, this study employs rigorous statistical methods, including multiple linear regression analysis, to identify precise correlations and causal effects. The findings are expected to bridge the knowledge gap by offering fresh insights into the solvency-profitability relationship specific to the Indonesian manufacturing context.

The primary objective of this research is to analyze the impact of solvency ratios (DAR, DER, and LDER) on profitability ratios (ROA and ROE) within the Indonesian textile and garment sub-sector. The study aims to determine the extent to which financial structure and debt management influence profitability. The benefits of this research include providing valuable insights for financial managers to optimize their decision-making processes in managing debt and equity. Additionally, the findings will aid investors and policymakers in understanding the financial health and performance of companies in this industry, thereby facilitating better resource allocation, investment strategies, and policy formulation.

**METHOD**

By using quantitative research, the data used is secondary data in the form of published annual financial reports. The data collection technique is in the form of a literature study obtained to filter the information needed and relevant, with a sampling technique in the form of *purposive sampling*, namely 5 companies. Its population namely manufacturing companies in the textile and garment sub-sector listed on the Indonesia Stock Exchange in the 2015-2019 period.

**RESULTS AND DISCUSSION**

**Classical Assumption Test Results**

Based on the statistical test, all models were declared to have passed the Classical Assumption test consisting of Normality, Heteroscedasticity, Multicollinearity, and Autocorrelation Tests.

**Multiple Linear Regression Analysis – ROA**

Model	Coefficients				
	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	-0.014	0.017	-	-0.810	0.425
DAR	0.251	0.075	1.222	3.326	0.003
DER	-0.078	0.015	-1.628	-5.327	0.000
LDER	0.035	0.019	0.370	1.866	0.073

Dependent Variable: ROA

Based on the table above, obtained results :

$$Y_1 = -0.014 + 0.251X_1 - 0.078X_2 + 0.035X_3 + \epsilon$$

The regression equation above shows that the constant value at -0.014 indicates that the variable *DAR* ( $X_1$ ), *DER* ( $X_2$ ), and *LDER* ( $X_3$ ) did not show any changes, therefore ROA ( $Y_1$ ) has a value of -0.014. *DAR* ( $X_1$ ) has a positive regression coefficient direction of 0.251. If other independent variables are assumed to be constant, then every

time there is an increase in DAR (X<sub>1</sub>) of 1 unit, ROA (Y<sub>1</sub>) also increases by 0.251, and vice versa. The regression coefficient DER (X<sub>2</sub>) has a negative direction of -0.078. If other variables are assumed to be constant, then every time there is an increase in DER (X<sub>2</sub>) of 1 unit there can be a decrease in ROA (Y<sub>1</sub>) of 0.078 units, and vice versa. While for LDER (X<sub>3</sub>) the regression coefficient moves in a positive direction, which is 0.035. If the assumption of other independent variables is constant, then every increase in LDER (X<sub>3</sub>) of 1 unit, ROA (Y<sub>1</sub>) will increase by 0.035 units, and vice versa.

**Multiple Linear Regression Analysis – ROE**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	(B)	Std. Error	(Beta)		
(Constant)	-0.083	0.090	-	-0.700	0.490
DAR	1.136	0.395	1.083	2.876	0.008
DER	-0.347	0.077	-1.413	-4.518	0.000
LDER	0.244	0.099	0.501	2.467	0.021

From the observation of the table above, here is the regression equation :

$$Y_2 = -0.063 + 1.136X_1 - 0.347X_2 + 0.244X_3 + \epsilon$$

The constant value at -0.063 shows that the variable *DAR* (X<sub>1</sub>), *DER* (X<sub>2</sub>), and *LDER* (X<sub>3</sub>) does not experience any change then ROE (Y<sub>2</sub>) has a value of -0.063. *DAR* (X<sub>1</sub>) has a regression coefficient towards the direction positive which is 1.136. It is assumed that other independent variables are constant, then for every increase in *DAR* (X<sub>1</sub>) of 1 unit, then the ROE value (Y<sub>2</sub>) will also increase by 1.136 units, and vice versa. For the regression coefficient *DER* (X<sub>2</sub>) moves in a negative direction of -0.347. So if the other independent variables are assumed to be constant, then every time there is an increase in *DER* (X<sub>2</sub>) of 1 unit there will be a decreasing impact on ROE (Y<sub>1</sub>) which is 0.347 units, and vice versa. The regression coefficient of *LDER* (X<sub>3</sub>) has a positive direction which is 0.244. If the assumption of other independent variables is constant, then if there is an increase in *LDER* (X<sub>3</sub>) of 1 unit, ROE (Y<sub>1</sub>) will also increase by 0.244 units, and vice versa.

**Hypothesis Testing**

Coefficients

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	-0.014	0.017	-	-0.810	0.425
DAR	0.251	0.075	1.222	3.328	0.003
DER	-0.078	0.015	-1.628	-5.327	0.000
LDER	0.035	0.019	0.370	1.866	0.073

Dependent Variable: ROA

Based on the table, the *DAR* variable (X<sub>1</sub>) is obtained with a t value of 3.326 and a significance of 0.003. The significance of the t value shows a smaller result compared to the α value (0.05), therefore *DAR* has an effect on ROA (Y<sub>1</sub>). *DER* variable (X<sub>2</sub>) with a t value of -5.327 and a significance probability value of 0.000. While for a significant t less than α (0.05), it shows that *DER* significantly influences ROA (Y<sub>1</sub>). *LDER* (X<sub>3</sub>) with a t value of 1.866 and a significance probability value of 0.073. Significant t with a value higher than α (0.05), so *LDER* has no effect on ROA (Y<sub>1</sub>).

Coefficients

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	-0.083	0.090	-	-0.700	0.490
DAR	1.136	0.395	1.083	2.876	0.008
DER	-0.347	0.077	-1.413	-4.518	0.000
LDER	0.244	0.099	0.501	2.487	0.021

Dependent Variable: ROE

Meanwhile, the *DAR* variable (X<sub>1</sub>) has a t value of 2.876 and a significance probability value of 0.008. The significance of t is lower than α (0.05), so *DAR* has an effect on ROE (Y<sub>2</sub>). *DER* variable (X<sub>2</sub>) with t value -4.518 and a significance probability of 0.000. Significant t lower than α (0.05), then shows the result that there is no influence between *DER* and ROE (Y<sub>2</sub>). *LDER* variable (X<sub>3</sub>) with a t value of 2.467 and a significance probability value of 0.021. Significant t is less than the α value (0.05), so there is a significant influence between *LDER* and ROE (Y<sub>2</sub>).

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.035	3	0.012	12.933	0.000
Residual	0.024	28	0.001		
Total	0.059	29			

Predictors: (Constant), LDER, DER, DAR

Dependent Variable: ROA

ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.897	3	0.299	11.904	0.000
Residual	0.653	28	0.025		
Total	1.550	29			

a. Predictors: (Constant), LDER, DER, DAR

b. Dependent Variable: ROE

Based on both tables The F-count value obtained was 12.933 and 11.904 with a significance level of 0.000 and 0.001 (<0.05). The F-table value of the ROA variable is 3.07, means that F-count (12.933) > F-table (3.07) with a significance level of 0.000 (<0.05) so that it can be stated that H01 is rejected while Ha1 is accepted. In other words, DAR, DER, and LDER simultaneously affect ROA. Meanwhile, the F-table value of the ROE variable is 3.07, which means F-count (11.904) > F-table (3.07) with a significance value of 0.001 so that H02 is rejected while Ha2 is accepted. This means that DAR, DER, and LDER simultaneously have an influence on ROE.

## CONCLUSION

significant positive influence between *Debt to Assets Ratio* and *Return on Assets*. This means that *the Debt to Assets Ratio* that moves down can be caused by total debt that also experiences a decrease accompanied by ineffective management of assets so that profit acquisition has not been achieved optimally. This has an impact on the movement of net profit which also decreases. If the ratio is high, then the company's funding activities sourced from liabilities are also higher.

*Debt to Equity Ratio* has a negative and significant effect on *Return on Assets*. The high ratio illustrates the high risk of failure that may occur, while the lower the result, the lower the risk of failure that will occur.

*Long-term Debt to Equity Ratio* has a positive and significant effect on *Return on Assets*. The low *Long-term Debt to Equity Ratio* reflects the company's high ability to pay long-term liabilities. This means that only a small portion of the company's capital comes from long-term debt, which has an impact on increasing *Return on Assets*.

*Debt to Assets Ratio* has a positive effect on *Return on Equity*. This means that the lower *the Debt to Assets Ratio* variable, *the Return on Equity* will increase, and vice versa if *the Debt to Asset Ratio* increases, *the Return on Equity* will decrease.

*Debt to Equity Ratio* has a negative effect on *Return on Equity*. The lower *the Debt to Equity Ratio* variable, the higher *the Return on Equity* variable, so if *the Debt to Equity Ratio* value increases, *Return on Equity* will decrease.

*Long-term Debt to Equity Ratio* has a positive and significant influence on *Return on Equity*. The increasing value of *Long-term Debt to Equity Ratio*, *Return on Equity* will decrease, likewise if *the Long-term Debt to Equity Ratio* decreases, *Return on Equity* will increase.

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