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The Influence of Solvency to the Profitability by Mediation of Activity Ratio in IDX Agricultural Sector

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Abstract

Keywords:

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The strengthening of natural resource governance in Indonesia had result a positive trend in the gross domestic product of the agricultural sector which made it more important and strategic. However, the performance of the agricultural sector in the stock market was in contrast to the contribution of the agricultural sector in Indonesia's Gross Domestic Product. The aim of this research was to find the dominance of solvency on profitability through the mediation of activity ratios. Quantitative data was processed using the causal associative method with moderating variables. The research results showed that there was a moderate and negative connection between solvency and profitability. Solvency was significant on profitability. Solvency experienced a reduction in the regression coefficient after the presence of mediation variable. There was a partial significance on solvency and activity ratio to the profitability. Thus, the activity ratio had a significant effect and was able to become a mediating variable on solvency to the profitability.

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INTRODUCTION

The agribusiness advancement program was highly respected by President Joko Widodo by prioritizing responsibility and assumptions of the natural wealth and climate in Indonesia in the future. This program was a program to strengthen natural wealth management, especially to maintain the food strength, people economic progress and nature conservation. This program provided an opportunity for regions to manage their natural wealth according to local policies.

The governance of Indonesia's natural wealth throughout 2013 to 2018 had result an increase in gross domestic product (GDP) in the agricultural sector. Besides growing rapidly, the capacity of the agricultural sector in economic development was also very crucial and substantial. One of the boosters of Indonesia's agricultural GDP was increasing exports, thus the trade balance of Indonesia's agricultural products in 2018 experienced a surplus (RI, 2019). However, the contribution growth of agricultural GDP to the national economy was not in line with the performance of the agricultural sector on the Indonesia Stock Exchange (IDX). Agricultural sector companies actually showed a decline in performance from year to year (Djajadi, 2019).

The performance of agricultural sector companies in the stock market was very in contrast to the contribution of the agricultural sector. Negative growth of stock return indicated a decrease in profitability (performance) in agricultural sector companies that registered on the IDX.

The facts above showed that agricultural sector companies were faced funding problems. Sources of funds can be obtained from internal (shares, bonds and retained earnings) or external (debt). The companies that used the debt portion were more than companied that used their own capital, resulting a large solvency value, thus resulting a decrease in profitability (Brigham & Houston, 2007). This theory was supported by the findings of Bintara (2020), Dalci (2018), and Khidmat & Rehman (2014) which resulting that solvency having a significant influence to the profitability. Aulova et al. (2019) found that solvency had a significant effect on profitability only in small companies, but not significant in large companies. Research by Eckbo & Kissner (2020) and Dalci (2018) actually had a positive association between solvency and profitability. Several previous studies expressed that solvency had an insignificant impact on profitability (Aziz & Rahman, 2017; Dahiyat, 2016).

The appearance of a downward trend in financial performance in agriculture that was registered on the IDX did not rule out the possibility that was happened because of a lack of effective management on existing assets. The high and low profitability was also influenced by the company's activities when managing the potential of available assets which can be measured through the activity ratio (Sartono, 2015). This opinion was not fully supported by the results of the study by Aulová et al. (2019) by comparing financial performance in small and big industries.

The research results showed that the activity ratio (TATO) has a significant effect on small companies, but not significant on big companies. Similar results were also obtained in the study of Demir & Tuncay (2012) in which the activity ratio had a positive connection and had an important impact on profitability. However, other research showed that the activity ratio did not have an important impact on profitability (Lay & Wiksuana, 2018).

The innovation of this research was to make modifications by using the activity ratio as a mediating variable. The logical thinking that formed was funding through debt channels made every company must have a commitment to pay debts. Where the payment of debt and interest will actually resulted in a relatively reduced amount of profit received by the company. Therefore, the company will perform additional strategies in order to maintain profits, so that they are still in a fairly high performance, such as through the effectiveness and efficiency of asset utilization (activities). If the agricultural industry that registered on the IDX was able to operate its wealth efficiently and effectively, the company will generate high profitability, so that there was no tendency to decrease the company's profitability as a result of debt. The aims of this research were 1) to determine the effect of solvency to the profitability and 2) to determine the effect of solvency to the profitability through the mediation of activity ratio in the agricultural sector that registered on the IDX.

RESEARCH METHOD

This research used 24 agricultural sector companies, consisted of 19 from farm sub-sectors, 3 fisheries sub-sectors, 1 livestock sub-sector and 1 food sub-sector which were listed on the IDX. The research used quantitative data that collected and taken from the financial overview of the annual reports of all agricultural sector companies from 2017 - 2019 that published on the IDX official page. A total of 71 data were successfully summarized and processed. Data processing was assisted by the application of SPSS version 24.

The stages of data processing and analysis were described in the following order, which were correlation coefficient analysis, determination coefficient analysis, *t* test, regression analysis, classical assumption test (Sugiyono, 2015).

The research used the independent variable, which was solvency that proxied by the ratio of total debt (DR), while the dependent variable was profitability proxied by assets return (ROA), accompanied by a mediating variable proxied by total asset turnover (TATO) in percentage (Brigham & Houston, 2007).

To meet the first research aim, to find the effect of solvency on profitability used inferential quantitative analysis method with regression correlation descriptive technique. To meet the second research aim, to find the effect of solvency on profitability through the mediation of activity ratios used inferential quantitative analysis methods with regression correlation comparative descriptive techniques.

RESULT AND DISCUSSION

The Influence of Solvency to the Profitability

The company intended to grow, developed and be able to coexist with other companies with the ultimate goal of achieving good financial performance. In achieving profits, companies need sources of subsidies. Financing can arise through

subsidies from the owner (internal) or other people (external). One of the funding from external parties was through debt. Funding through debt means that every company must have a commitment to pay debts. Where, the payment of debt and interest will actually result a relatively reduced the amount of profit received by the company. Funding by using debt can reduce the short-term profit of a company. Improper debt management will lead to failure to pay interest, although debt also allowed the company to obtain long-term profits.

Table 1. Correlation Coefficient and Solvency Determination – Profitability of IDX Agricultural Sector 2017 – 2019

Model	R	R Square
1	0,422	0,178
Predictors : (Constant), DR		
Source: Processed from primary data (2021)		

The correlation coefficient of the solvency independent variable (DR) and the profitability dependent variable (ROA) seen from the value of $R = 0,422$ was in the correlation interpretation interval of $0,40-0,599$, thus it was found to have a moderate level of connection. It can be concluded that agricultural sector companies that listed on the Indonesia Stock Exchange 2017 – 2019 indicated a moderate connection between solvency (DR) and profitability (ROA).

The determination coefficient value of solvency (DR) with profitability (ROA) by looking at R Square was worth $0,178$ or $17,8\%$. The result of determination coefficient had meaning that the variation or combination of the independent variables, which was solvency (DR) can explain the dependent variable profitability (ROA) of $17,8\%$.

Table 2. Regression and Solvency Significance – Profitability of IDX Agricultural Sector 2017 – 2019

Model	Unstandardized Coefficients		Standardized Coefficients Beta		
	B	Std. Error		T	Sig.
1 (Constant)	7,839	2,440		3,212	0,002
DR	-0,137	0,035	-0,422	-3,872	0,000
Dependent Variable: ROA					

Source : Processed from primary data (2021)

The test results showed that the value of t count $|3,872| > t$ table $2,000$ (in table 2). Testing by looking at the significance value of $0,00 < 0,05$, so H_a was accepted and H_o was rejected. The conclusion that can be drawn was that solvency (DR) has a significant effect on profitability (ROA) in Agricultural Sector Companies that listed in the Indonesia Stock Exchange for the period of 2017-2019.

The results of the regression in table 2, an equation can be formed a profitability regression = $7,839 - 0,137$ Solvency + e. The company has a profit of $7,839$ units if it has no debt. The regression coefficient value of the solvency variable (DR) was negative, which means that solvency had a negative or opposite connection to profitability.

Solvency had a significant effect on profitability in agricultural sector companies as seen from the profitability ratio which showed the average value of profitability was in a negative number, which means that the company suffered losses caused by the amount of debt/liabilities borne by the company, therefore the profits earned by the company were used to meet obligations. This research agreed with studies from Bintara (2020), Dalci (2018) and Khidmat & Rehman (2014) that solvency had an effect on profitability. However, this research did not agree with the study of Aulová et al. (2019), Lay & Wiksuana (2018), Aziz & Rahman (2017) and Dahiyat (2016) that solvency had no significant effect on profitability.

The Influence of Solvency to the Profitability with Mediation of Activity Ratio

A good financial performance was the main hope of every company. With good financial performance, it gave company the opportunity to continue growing and expanding its business. In the efforts of business development, required big amount of funds. Funding decisions through the debt channel made every company must have a commitment to pay debts. Whereas, the payment of debt and interest will actually result a relatively reduced amount of profit that received by the company. Therefore, the company must also conduct other strategies in maintaining profits, so that they were still in a fairly high performance, such as through the effectiveness and efficiency of asset utilization (activities). Hoping that the assets were used optimally will obtain maximum results. The more effective asset management for achieving sales targets, the greater the profit will be. In other words, debt will encourage companies to be more effective and efficient in the utilization of assets, so that they were able to achieve the expected profit.

Table 3. Solvency Normality Test – Profitability with Mediation of Activity Ratio in IDX Agricultural Sector 2017 – 2019

		Unstandardized Residual
N		71
Normal Parameters ^{a,b}	Mean	0,0000000
	Std. Deviation	9,88355557
Most Extreme Differences	Absolute	0,142
	Positive	0,127
	Negative	-0,142
Test Statistic		0,142
Asymp. Sig. (2-tailed)		0,001 ^c

Source: Processed from primary data (2021)

The following described consecutively the classical assumption test, which consisted of normality, multi-collinear, autocorrelation and heteroscedasticity tests. Testing for normality (table 3) used the Kolmogorov-Smirnov test, was found *Asymp. Sig.* 0,001 < 05, it can be concluded that the data were not normally distributed.

Table.4. Solvency Multi-Collinear Test – Profitability with Mediation of Activity Ratio in IDX Agricultural Sector 2017 – 2019

		Coefficients ^a		
		95,0% a Confidence Interval	for B	Collinear a Statistics
Model		Lower Bound	Upper Bound	Tolerance VIF
1	(Constant)	-1,110	9,895	
	DR	-0,203	-0,066	0,999 1,001
	TATO	0,010	0,101	0,999 1,001

Source: Processed from primary data (2021)

The Multi-collinear test by looking at the tolerance $0,999 > 0,1$ and the VIF value of $1,001 < 10$, it was concluded that there was no multi-collinear in the independent variables in the regression model (table 4).

The autocorrelation test was conducted by comparing the Durbin-Watson results with the table values. Durbin Watson table with $n = 71$ and $k = 2$ found the value of dL was $1,557$ and dU was $1,6773$. The results of the autocorrelation test statistic showed that $dU < d < 4 - dU$ or $1,6773 < 1,864 < 4 - 1,6773$, which was $1,6773 < 1,864 < 2,3227$, so there was no autocorrelation (table 5).

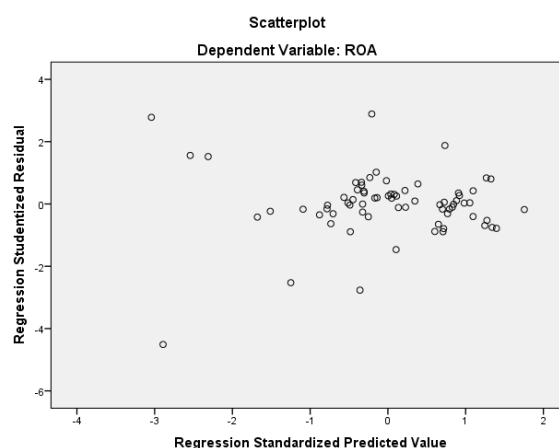
Table 5. Solvency Autocorrelation Test – Profitability with Mediation of Activity Ratio in IDX Agricultural Sector 2017 – 2019

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0,493 ^a	0,243	0,221	10,02785	1,864

Source: Processed from primary data (2021)

Heteroscedasticity testing was conducted by using the results of the *Scaterplot* image and it was found that certain patterns occurred such as melting and then narrowing in certain parts, so it can be concluded that heteroscedasticity problems tended to occur (figure 2).

The correlation coefficient value of solvency variable and profitability variable mediated by the activity ratio was seen from the R value of 0.493 which had a moderate level of connection. The research results on agricultural sector companies that listed in the Indonesia Stock Exchange 2017 – 2019 indicated a moderate connection between solvency (DR) and profitability (ROA) which mediated by activity ratio (TATO).



Picture 2. Solvency Heteroscedasticity Test – Profitability with Mediation of Activity Ratio in IDX Agricultural Sector 2017 – 2019

Source: Processed from primary data (2021)

The percentage of the influence of independent variable on the dependent variable value in the presence of a mediating variable was indicated by the magnitude of the determination coefficient (r^2), which was 0,243 or 24,3% (table 5), mean that solvency (DR) can explain profitability (ROA) with the mediation of activity ratio variable (TATO) by 24,3%.

Table 6. Solvency F Test – Profitability with Mediation of Activity Ratio in IDX Agricultural Sector 2017 – 2019

	Df	SS	MS	F	SignificanceF
Regression	2	2.199,196	1.099,598119	10,93499	0,0000763
Residual	98	6.837,927	100,5577492		
Total	70	9.037,123			

Source: Processed from primary data (2021)

The test results was found that the calculated F value was $10,93499 > F$ table 2,75. Testing through *significance F/sig.* $0,000763 < 0,05$, then H_a was accepted and H_o was rejected. The conclusion that can be drawn was solvency (DR) had a significant effect on profitability (ROA) through the mediation of the activity ratio (TATO) in agricultural that listed on the IDX 2017 - 2019.

Table 7. Regression and Solvency Significance – Profitability with Mediation of Activity Ratio in IDX Agricultural Sector 2017 – 2019

Model	Unstandardized Coefficients		Standardized Coefficients Beta		T	Sig.
	B	Std. Error				
1 (Constant)	4,392	2,757			1,593	0,116
DR	-0,135	0,034		-0,415	-3,934	0,000
TATO	0,055	0,023		0,255	2,415	0,018

Dependent Variable: ROA

Source: Processed from primary data (2021)

The regression analysis in this research was used to analyze the ability of the mediating variable to be a significant predictor. The value of the regression coefficient on the solvency variable (DR) was negative, means that there was an opposite connection between solvency and profitability. The solvency regression coefficient value (DR) was negative of 0,135. This value was smaller than the regression coefficient before the presence of mediation variable (TATO), which 0,137 (table 2). The decrease in the regression coefficient value on solvency (DR) qualified for the activity ratio (TATO) as a mediator in influencing solvency (DR) to the profitability (ROA).

The solvency significance value (DR) *Sig.* of $0,000 < 0,05$ means that solvency (DR) was partially significant in profitability (RAO). The significance value of the activity ratio (TATO) *Sig.* of $0,018 < 0,05$, which means the activity ratio (TATO) was partially significant on profitability (RAO). This result means that the activity ratio (TATO) can be partially a mediator on the influence of solvency (DR) to the profitability (ROA). This partial mediation means that the activity ratio (TATO) was only able to be a moderator of half connection between solvency (DR) and profitability (ROA), for the rest, there was a direct connection between solvency (DR) and profitability (ROA) variables.

The influence of debt to the profit with the activity ratio as a mediation showed that the activity ratio can act as a moderator of the influence of debt to the profit partially. This partial mediation means that the activity ratio moderated only part of the connection between debt and profit, for the rest, there was some direct connection between debt and profits of the agricultural sector that registered on the IDX in the period of 2017 – 2019. A big activity ratio value was better, because the sales results were able to use assets in increasing company profits. The activity ratio had a contribution to the achievement of profitability and the company's overall assets were used to achieve profit. This research partially agreed with previous studies, which was that there was a positive and significant association of activity ratios to the profitability. The higher the TATO, the better, because the maximum use of assets to achieve sales targets will result in increasing profits (Demir & Tuncay, 2012; Lubis et al., 2019). Likewise, with the research of Kelvin et al. (2019) which explained that the activity ratio had a greater contribution and depicted that the company's overall assets were used to achieve profit. However, this study disagreed with Aulová et al. (2019) which resulted the activity ratio had a negative connection to profitability. Likewise, the research of Lay & Wiksuana (2018) gave a result that the activity ratio had no significant effect on profitability.

This research revealed that the activity ratio can moderate the influence of solvency to the profitability in agricultural sector companies, even though only partial mediation occurred. Partial mediation was based on the financial composition of the agricultural sector which was dominated by fixed assets, but was unable to determine the selling price of its products. As a result, the sales target was not achieved only through the maximum utilization of assets, thus affecting the achievement of profit.

CONCLUSION

The results of this research can be concluded the first conclusion, which that there was a significant effect on debt to the profit. The greater the debt, it will result in a reduction of profit or vice versa. This research was modified by adding a strategy of effectiveness and efficiency of asset utilization (activity). The research results proved that there was a significant effect of solvency to the profitability by partially mediating the activity ratio. Therefore, the higher the activity ratio, the better will be. The assets that were used optimally will obtain maximum results, because the sales results that were able to use assets optimally will result an increase in company profits that were able to ease the debt burden and maintain profit levels.

RECOMMENDATION

It is recommended for further researchers to add data sources directly from field surveys, therefore, it able to produce a more in-depth analysis and obtain more accurate field facts in order to produce the right solution to be applied to the company.

Further research can also be developed with the activity ratio as a mediating variable by using other proxies, considering the tendency of problems in funding and inventories in the agricultural sector that listed on the stock exchange.

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