

# The Role of Return on Assets on the Effect of Value Added Capital Employed towards Business Growth

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**Abstract**—Previous studies show the testing of return on asset and other variables using the same measurement period, have not given significant empirical result. Therefore, this research takes a crack at the using different measurement period of return on assets. This research aims to investigate whether return on assets in previous period is moderating the influence of value added capital employed towards business growth. A total of 261 observations were used to assess overall fit of the tested model and test hypotheses using moderating regression of panel data. The findings show that using the fixed effects model of panel data, one of intellectual capital element, the value added capital employed, is weakened by return on assets in previous period in influencing business growth. Knowing the importance of strengthen/weakened value added capital employed can help companies focus on what business growth the most.

**Keywords**—business growth; moderating regression of panel data; return on assets; value added capital employed

## I. INTRODUCTION

During the past three decades, research related to value added capital employed is one element of intellectual capital, using the knowledge economy, resources-based view theory, and stakeholder theory or stewardship theory as the basis for theory. All of these theories are interrelated and their use depends on contingency and contextual.

The knowledge economy focuses on productivity which contributes to the acceleration of the economy. This challenge encourages resources-based view theory to focus on resources and the company's ability to create competitive advantage to face global competition. Increased productivity requires internal company resources through investing in intellectual capital that drives the company's financial performance and lead to growth and global economic development.

In practice, companies are often difficult to recognize value added capital employed because of its intangible nature or even ignore it. The initial measurement of value added capital employed was carried out by Pulic which leads to the development of value added intellectual capital (VAIC) [1]. This model starts with the company's ability to create value added (VA) which shows the company's ability to grow business.

VA is calculated as the difference between output and input. Output (OUT) represents revenue and includes all products and services sold in the market, while input (IN) covers all expenses used in obtaining revenue. The important thing in this model is that employee expenses do not include IN. Because of its active role in the process of value creation, the intellectual potential (which was presented by labor expenses) is not counted as a cost and not a mask in computing IN. therefore, a key aspect in the Public model is to treat labor as a value creating entity. Therefore, this study develops the hypothesis as follows: H1: value added capital employed has a significant positive effect on business growth

The addition of this component of capital employed value added certainly requires the readiness of the company because all company activities must be focused on value creation. Therefore, support from the company's ability to generate profits from its asset operations allegedly can affect the implementation of the intellectual capital component in an effort to increase sales growth. For this reason, this study tries to investigate the role of return on assets, as a proxy of the company's ability to generate profits from operating assets, in the previous period the positive influence of capital employed value added on business growth by developing the hypothesis Return on Assets as moderating as follows: H2: return on assets in the previous period moderated significantly the positive effect of capital employed value added on business growth.

## II. METHOD

Unit of analysis in this study are companies, with a research population are companies in the manufacturing industry listed on the Indonesia Stock Exchange. The sampling procedure followed the purposive sampling rules, that is, companies that have complete data since 2012. The year 2012 was the year when companies experienced steady growth after the 2008 crisis. Companies were judged to have positive net income. But because the profits of several companies in 2016 knew of a downward trend, data collection was up to 2015.

All research data uses secondary data obtained from the Financial Reports downloaded from the Indonesia Stock Exchange website. For the purpose of testing return on assets in the previous period, data collection on return on assets began in 2012 and other variables began in 2013. Thus 72 companies

were obtained during the observation period or 216 observations.

The research model used to test hypotheses that have been built using a moderating regression panel data model. The panel data is used to accommodate the types of data that are time series and cross-section. Panel data can reduce the problem of dynamic change inference that occurs in the diversity of cross section units. The process of selecting the effect model to be used in hypothesis testing, whether the common effect model or the fixed effect model or random effect model, is carried out through a series of tests, the Chow Test and the Hausmann Test, even LM Test if needed. While moderating regression models are used to see the effect of moderation by calculating the interaction between the variable return on assets in the previous period with variable value added capital employed. The research model is as follows:

$$\text{Growth} = a_0 + a_1 \text{vaca} + a_2 \text{roa} + a_3 \text{vaca} * \text{roa} + e \quad (1)$$

"Growth" is a proxy of a variable business growth as measured by sales growth, the sales observation period reduced by the previous sales period, then divided by the previous period of sales as in research [2]. "Vaca" is a proxy of value added capital employed whose measurements follow the measurement of Pulic [1]. Vaca is measured based on the ratio of value added created to physical capital. "RoA" is a proxy of return on assets measured using the previous period, namely net income before the tax previous period to the total asset of the previous period.

**III. RESULTS AND DISCUSSION**

The data used in this study shows that the average business growth is close to 64%, the average previous period return on assets is around 15%, and the average value added capital employed is close to 44%. This condition illustrates that the company on average managed to increase sales by 1.64 times from the previous year and has physical capital that can be a value added for the company by 44%. But unfortunately, the company's ability to use all of its assets on average to generate profits only reaches 15%.

TABLE I. STATISTICS DESCRIPTIVE

	VACA	ROA	GROWTH
Mean	0.438553	0.639472	0.157180
Median	0.392715	0.609270	0.126355
Maximum	1.302000	1.384860	1.295100
Minimum	0.252670	0.504120	0.000590
Std. Dev.	0.162714	0.129940	0.160619
Skewness	2.094228	2.108649	3.679646
Kurtosis	8.920083	9.114431	23.61525
Observations	216	216	216
Cross sections	72	72	72

The research model used in this study has been free from problems of normality, heteroscedasticity (White cross-section standard errors & covariance has been done), multicollinearity

(VIF values in diagnostic coefficients no more than 10), and autocorrelation (Durbin-Watson stat values show located in an area not affected by autocorrelation problems). Furthermore, based on the results of searching for the right model in the panel data and after conducting the Chow Test and Hausman Test, it showed that the fixed random effect model on the panel data was the most appropriate model to test the hypothesis.

Empirically the test model has a prob (F-statistics) value below 5% and R-squared 47.73%. That is, the influence of roa, vaca, and vaca \* vaca interactions on business growth proved to be statistically meaningful. Roa, vaca, and roa \* vaca interactions can explain the growth of 47.73%. Furthermore, the vaca coefficient value is positive (2.48) with a significant t-test result at alpha 10% (H1 proven). Meanwhile, the value of the interaction coefficient of the previous period return on assets with vaca shows a negative number (-4.19) also with the results of a significant t-test at alpha 10% (H2 proven). These results show that value added capital employed has a significant positive effect on business growth and previous period return on assets proved to weaken the positive influence of capital employed values added to business growth.

TABLE II. PANEL DATA TESTING MODEL WITH FIXED EFFECTS MODEL

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.635119	10.75789	-0.151993	0.8794
ROA	6.996887	14.26399	0.490528	0.6245
VACA	2.478955	1.404632	1.764842	0.0798
VACA*ROA	-4.189316	2.340350	-1.790038	0.0757
Fixed Effects (Cross)				
AALI--C	-0.154129			
ADES--C	0.091544			
.....				
.....				
UNVR--C	0.226714			
WIIM--C	0.060248			
<b>Effects Specification</b>				
<i>Cross-section fixed (dummy variables)</i>				
R-squared	0.477318	Mean dependent var	0.157180	
Adjusted R-squared	0.179733	S.D. dependent var	0.160619	
S.E. of regression	0.145470	Akaike info criterion	-0.741508	
Sum squared resid	2.899134	Schwarz criterion	0.492969	
Log likelihood	159.0828	Hannan-Quinn criter.	-0.242776	
F-statistic	1.603971	Durbin-Watson stat	2.442087	
Prob(F-statistic)	0.007996			

WARNING: estimated coefficient covariance matrix is of reduced rank

The results of testing the first hypothesis are consistent with the results of research by Dane-Nielsen & Nielsen and Mention & Bontis [3, 4]. Investment policy on physical assets requires a long-term feasibility study. The effective use of all materials and financial assets is expected to boost sales. The increase in sales from period to period illustrates the positive sales growth. Thus, the greater the company can create added value from its physical capital, the greater the sales growth.

Although the results of testing the second hypothesis provide empirically significant results, but return on assets in

the previous period actually weakens the positive influence of physical assets that have been invested and provides added value to the company to the magnitude of sales growth. Return on assets generated in the previous period should actually strengthen the positive influence of value added capital employed on sales growth. Sales can increase apart from being supported by large physical assets, also reinforced by the results of operations from the previous period. If the company can use all of its assets to generate profits in the previous period, then the total assets in the current period which are getting bigger can certainly generate greater profits. To get a bigger profit than the previous period, the main target to realize is by increasing sales.

But the results of this study show the return on assets in the previous period weakened the positive influence of capital employed values added to business growth. This condition is suspected, there is an aggressive policy to increase investment in physical assets due to the achievement of profits obtained in the previous period. The addition of large physical assets causes large expenses, even the amount cannot be covered by the achievement of previous period profits. Thus, the achievement of previous period profits actually weakened the positive influence of capital employed values added to business growth.

These results have implications for companies to consider the policy of adding physical assets that have consequences on the emergence of large expenses. Like a consideration to increase physical assets whose funds are obtained from debt.

Because with debt will increase the company's interest expenses to increase. Therefore, the company needs to pay close attention to the leverage of the debt policy.

#### IV. CONCLUSION

This study succeeded in proving the hypothesis empirically that value added capital employed had a significant positive effect on business growth and return on assets in the previous period weakened the positive influence of capital employed values added to business growth. However, this study has limitations in the method of measuring return on assets, which in this study used profit before tax. For further research can use operating profit to focus more on increasing sales and operating expenses.

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