

EVIDENCE PANEL APPLICATION FOR INTELLECTUAL CAPITAL : CASE STUDY INDONESIA

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Abstract

Objectives of this study to look at an analysis of the firm's value of intellectual capital using an OLS model panel. Design research-The research design uses several models of intellectual variables and views of human resources. Beginning with review of results, literature, and evaluation of intellectual capital, and its relationship to company value. The OLS panel regression analysis was developed and justified in evaluating a model. Findings-From the research that has been done, model evaluation through the process of value added of intellectual capital in Indonesia, does not give the whole idea that intellectual-related human resources for strategic corporate investment. This is seen from the results that do not affect the overall variable using OLS panel test. Limitations of research and implications-This research only emphasizes the concept of intellectual value added, partly the application of in-company analysis, and is one of the representatives of many industries in the country. The practical implications of this lat analytical model can provide average investment-related inputs considering general models and trends and economic development.

Keywords: Value Added Capital Employed, Value Added Human Capital, Value added Intellectual Coefficient and Structural Capital Value Added.

INTRODUCTION

In recent years, much research has focused on intellectual capital in all its forms and sizes of measurement, when viewed in relation to the problems and impacts of an intangible asset, which can be marketed in terms of the economics of the firm Alcaniz, L., et al. (2011) [1] and Wang, M. (2013) [2]. If market value is generally accepted, then the market value can be said to be the value of the books used to assess over all assets of intellectual capital owned by the company. However, if it is not possible to relate the market value of the market, it is necessary for the active role of a capital market or capital market institution. Broadly speaking, there is a difficulty to reach and approach this goal, because it relates to the intellectual capacity possessed by humans. The existence of difficulties in the problem or related measurement, as well as the challenges in determining the exact value, if we assume such an accounting in value-added, or associated with a consistent market. The purpose of this study is to provide a presentation, which is meant not to ask questions, whether the value of intellectual capital of the company has value, whereas in general, it is used for material evaluation and use of resources in tangible or intangible form more efficient. Certainly this will allow for a relationship to the effectiveness of the use of tangible or intangible resources within the enterprise market, which will ultimately be able to value the functioning of an activity in the Brown Jr. A capital market, et al. (2005) [3] and Tawy, N., and Tollington, T. (2012) [4]. The purpose of this research is to conduct re-evaluation related to intellectual capital, which is now widely used and often conducted in several countries, including Indonesia. So if we do and see an added value in the company, especially in the food and beverage industry sector, it can not be denied the use and application of this method at a value worthy of recognition.

INTELLECTUAL CAPITAL THEORY

The value added intellectual coefficient (VAIC) method was developed by several studies from 1997 designed to present the formation of the value creation efficiency of tangible assets and the intangible assets of Pastuszak, Z., et al. (2013) [5], Pulic, A. (2000) [6], Stahle, P., et al. (2011) [7] and Riahi-Belkaoui, A. (2003) [8]. VAIC is an instrument that is usually used to measure the performance of an intellectual capital company. One approach that is relatively easy and very possible to do, because it is constructed from the model of accounts contained in the financial statements of the company, such as those in the balance sheet and L / R. Benefits from the use of Value Added Intellectual Capital method is data that is needed easily obtained from various sources and types of companies. For the data required and for calculating the ratios in the VAIC use the value of financial analysis values that have been in general, and widely available from the company's financial statements. If there are other Intellectual Capital measurement alternatives, it is only limited to the unique financial and non-financial indicator income, and only to complement the profile of an individual company.

This model begins with the company's ability to create value added (VA). Value Added is the most objective indicator for assessing business success and demonstrating the company's ability in value creation. VA is calculated as the difference between output and input. Output (OUT) represents revenue and covers all products and services sold in the market, while input (IN) includes all expenses used in generating revenue. The important thing in this model is that the expense of employees does not include IN. because its active role in value creation process, intellectual potential (presented with labor expenses) is not counted as cost and not mask in IN compound. therefore, the key aspect in the Pulic model is to treat labor as a value creating entity. In Maditinos, D., et al. (2011) [9], Boujelbene, M.A., and Affes, H. (2013) [10], and Pucar, S. (2012) [11] In more succinct, the formulations and stages of VAIC calculations are as follows:

1. Calculating Value Added (VA) is the difference between output and input.

$$VA = OUT - IN$$

Where :

OUT = Output; total sales and other revenue

IN = Input; selling expenses and other expenses (other than personnel expenses)

Or it can be calculated in other ways that is:

$$VA = OP + EC + D + A$$

Where :

OP = Operating Profit (Operating Profit)

EC = Employee Cost (Employee Expense)

D = Depreciation

A = Amortization (Amortization)

2. Calculating Value Added Capital Employed (VACA)

VACA is an indicator for VA created by a unit of physical capital. This ratio shows the contribution made by each unit of CE to the value added organization.

$$VACA = VA / CE$$

Where :

VACA = Value Added Capital Employed: the ratio of VA to CE

VA = Value Added

CE = Capital Employed; available funds (equity, net income).

3. Calculating Value Added Human Capital (VAHU)

VAHU shows how much VA can be generated with funds spent on labor. This ratio shows the contribution made by each rupiah invested in HC to the value added of the organization.

$$VAHU = VA / HC$$

Where :

VAHU = Value Added Human Capital is the ratio of VA to HC

VA = Value added

HC = Human Capital ie Employee Expense.

4. Calculating Structural Capital Value Added (STVA)

This ratio measures the amount of SC needed to generate 1 rupiah from the VA and is an indication of how SC's success is in value creation.

$$STVA = SC / VA$$

Where :

STVA = Structural Capital Value Added is the ratio of SC to VA

SC = Structural Capital: VA – HC

VA = Value added

5. Calculating Value added Intellectual Coefficient (VAICTM)

Namely indicating the intellectual ability of the organization that can also be considered as a BPI (Business Performance Indicator) VAICTM is the sum of the 3 previous compact: VACA, VAHU and STVA, Pucci, T., all. (2013) [12]

$$VAICTM = VACA + VAHU + STVA$$

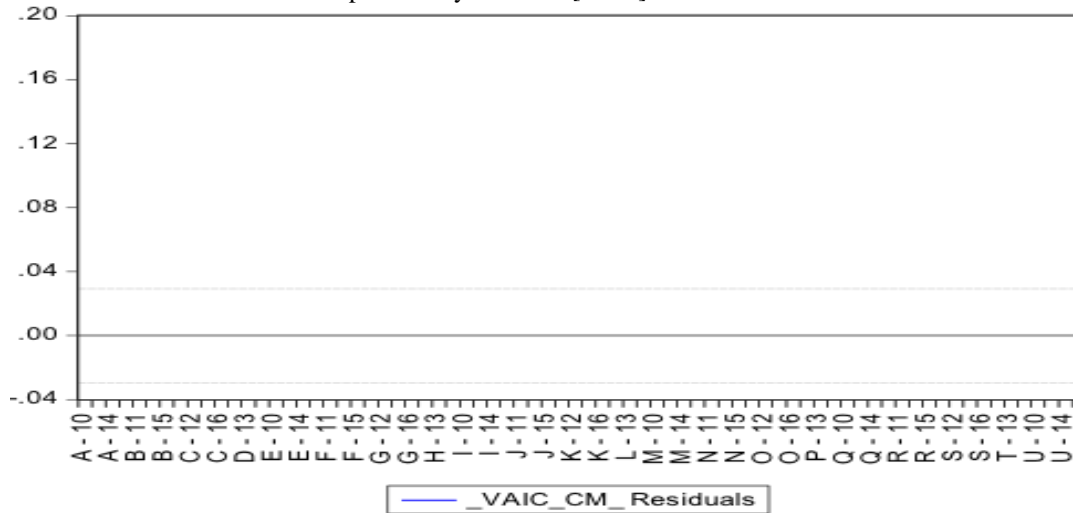
DATA AND RESEARCH METHOD

Time and Research data

This research is done by writer in juni-july year 2017. This research use 70 data of company financial report for year ending 2011-2016. The variables in this research are: Value Added Capital Employed (VACA), Value Added Human Capital (VAHU), Value added Intellectual Coefficient (VAICTM) and Structural Capital Value Added (STVA) Rahman, S. (2012) [13] and Tanideh , S. (2013) [14-16].

Technique of analyzing research data

In this research using fixed affect and random effect model analysis, by using Y and X variable are Value Added Capital Employed (VACA), Value Added Human Capital (VAHU), Value added Intellectual Coefficient (VAICTM) and Structural Capital Value Added (STVA). Here the authors show the residual value of research data with OLS panel analysis model [17-20].



RESEARCH RESULT

According to Stewart, TA (1999), the term intellectual capital is used for all non-tangible or non-physical assets and resources of an organization, which include processes, innovation capacities, patterns, and invisible knowledge of its members and its network of colobic and organizational relations. Intellectual capital is also defined as a combination of intangible resources and activities that allow the organization to transform a bundle of material, financial and human resources into a system's ability to create stakeholder value [21-24].

Panel Model With OLS

Table 1 : Result panel OLS

Dep. Var : _VAIC_CM_				
Method: Panel ols				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.099686	0.086877	-1.147440	0.2531
STVA	0.004832	0.010366	0.466132	0.6418
VACA	0.003935	0.003113	1.263786	0.2084
VAHU	0.001960	0.012761	0.153563	0.8782
R-squared	0.017319	Mean dependent var		0.012104
Adjusted R-squared	-0.003296	S.D. dependent var		0.029283
S.E. of regression	0.029331	Akaike info criterion		-4.193489

Sum squared resid	0.123027	Schwarz criterion	-4.112117
Log likelihood	312.2215	Hannan-Quinn criter.	-4.160427
F-statistic	0.840098	Durbin-Watson stat	1.446438
Prob(F-statistic)	0.474020		

Source : Proceed by author with software

The advantages of using panel data analysis include:

1. Addressing the problem of individual heterogeneity (individual heterogeneity);
2. Provide more informative data, reduce the problem of collinierity in variables, overcome the ommitted variable (ommitted variable), and result in greater degree of freedom;
3. Studying dynamic changes (dynamics of adjustment);
4. Can identify and quantify effects that can not be performed on time series or pure cross section analysis;
5. Can reduce the bias in estimating because the data is quite a lot.

From the above explanation shows the results of the conclusions of the proposed OLS panel model, that there is no significant partial and simultaneous relationship to intellectual capital in the perusal.

Wald Test

Wald test, is a test using normal distribution approach. If n approaches infinity ($n \rightarrow \infty$), then binomial distrying will be close to the normal distribution. The normal approach is well used if $n\pi \geq 5$ and $n(1-\pi) \geq 5$. Continued review for panel data test with OLS model is wald test.

Table 2 : Result Wald est for panel OLS

Wald Test:			
Equation: Untitled			
Test Statistic	Value	df	Probability
F-statistic	0.659210	(2, 143)	0.5188
Chi-square	1.318420	2	0.5173
Null Hypothesis: C(1)=0,C(3)=2*C(4)			
Null Hypothesis Summary:			
Normalized Restriction (= 0)	Value	Std. Err.	
C(1)	-0.099686	0.086877	
C(3) - 2*C(4)	1.55E-05	0.025476	
Restrictions are linear in coefficients.			

Source : Proceed by author with software

Visible results for Wald Test or partial test which is a test of self-coefficient significance. The Wald test is the same as the T test, the T test is one of the statistical tests used to test the truth or falsity of the null / nil

hypothesis (H 0) which states that between two random samples taken from the same population there is no significant difference . As the result of the test using OLS panel, there is no significant and simultaneous correlation. and the OLS panel test results are reinforced with the results of the wald test, which gives insignificant results for the resulting probability level is insignificant. Here is the equation for the forecasting model of the proposed OLS panel.

Estimation Command:

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=====
LS(?) _VAIC_CM_C_STVA_ _VACA_ _VAHU_
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Estimation Equation:

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_VAIC_CM_ = C(1) + C(2)*_STVA_ + C(3)*_VACA_ + C(4)*_VAHU_
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Substituted Coefficients:

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=====
_VAIC_CM_ = -0.0996857111513 + 0.00483195772984*_STVA_ + 0.00393469597754*_VACA_ +
0.00195959811387*_VAHU_
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CONCLUSION

From the research done can be explained that, theoretically intellectual capital is a good concept when applied by the company, so as to increase investor confidence in the company and will impact on increased investment for the company so as to provide benefits for the company with an increase in the value of his company. It will also lead to improved corporate financial performance, which is one of the factors that shows the effectiveness and efficiency of an organization in order to achieve its objectives. The purpose in this case is the goal of the company, namely to increase the value of the company. The value of the company is reflected in the company's stock price. Thus, companies with high corporate value can be obtained by optimizing the capital of intellectual capital in each company and will be able to improve the performance of the company. But statistically not get results related to the theory in intent.

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