

RELATIONSHIP ANALYSIS BETWEEN EVA, EPS, ROA, ROE TO MVA FOR MEASURING FINANCIAL PERFORMANCE (CASE STUDY ON TELECOMMUNICATION COMPANIES LISTED IN IDX 2011-2016)

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Abstract

The main objective of this study was to examine the relationship between EVA, EPS, ROA, ROE on shareholder value as represented by MVA on telecommunication operator companies which listed on the Indonesia Stock Exchange with the observation period 2011-2016. Results of analysis, independent variables EVA, EPS, ROA and ROE have significant relationship to MVA as dependent variable. On partial correlation analysis result, EVA and ROE have significant relationship to MVA, EPS and ROA have no significant relationship to MVA.

Keywords: *Economic Value Added (EVA), Earning Per Share (EPS), Return on Assets (ROA), Return on Equity (ROE), Market Value Added (MVA)*

1. Introduction

In the midst of the slowing down of the domestic economy, the telecommunications sector has recorded considerable growth. Telecommunications industry revenues still show strong growth. As of Q2 / 2016, telecommunications sector revenue growth grew 14.1% compared to the same quarter a year earlier. In fact, until the first half of 2016, the growth of the Indonesian telecommunications industry grew 15.9 % and became the fastest in the Asia Pacific region. UBS Global Research report released October 12, 2016 shows that since the second quarter of 2015 telecommunications industry revenues showed a strengthening trend above 10%. Also by the review of the Center of Reform on Economics (CORE) in Economic Outlook 2017, predicted the telecommunications sector grew at 8% - 10%. (<http://www.imq21.com/news/read/404442/20161123/184336/CORE-Prospek-Sektor-Telekomunikasi-Sangat-Cerah-di-2017.html>).

In relation to the financial performance assessment of telecommunication companies, the company's health level for shareholders also has an interest in knowing the actual conditions within a company, in order to bring enough capital to be safe and obtain favorable returns from invested investments. Performance and management achievement as measured by financial ratios are less accountable because the financial ratios generated depend on the method or accounting treatment used. With this accounting distortion of the traditional accounting based performance measures such as earnings per share, earnings growth and the rate of return is not effective anymore. Since measurements based on these ratios are not reliable in measuring the added value created over a given period, criticism is asked about how valid performance measurement based on financial ratios can indicate the actual performance of the firm's management [18].

The traditional financial measurements such as Earning per Share (EPS), Return on Assets (ROA) and Return on Equity (ROE), and how its influence to shareholder value (market) has been much discussed since long. Since the 1990s, some opinions have been raised to lift the EVA (economic value added) as a measure of financial performance, mainly by Stern Stewart & Co. [16:15]. The Economic Value Added (EVA) to be relevant to measure performance based on the value (value) for EVA is a measure of economic value generated by the company as a result of activity or management strategies. In terms of financial performance measurement, traditional measurements such as EPS, ROE and ROA with EVA and MVA measurements, EVA and MVA may be a better long-term performance measurement than traditional accounting [7]. According to, the results of tests measuring information EVA and traditional financial performance (ROA, ROCE, ROE and EPS) is correlated with variations in the market value of the company (MVA). The results show significant support for EVA and provide evidence of excellence over conventional / traditional performance measures [6].

Instead of research [1], although the literature says EVA is superior to traditional measures (such as earnings per share (EPS), dividend per share (DPS), return on assets (ROA) and return on equity (ROE), but the results of the study did not find the benefits of EVA, a strong relationship between MVA and cash flow management. The study also showed no significant correlation between MVA and EPS or MVA and DPS, had little ROE relationship with MVA.

This has led the authors to analyze relationship of financial performance measurement based on the value of EVA, EPS, ROA, ROE to the company's value in the market which is represented in the MVA for case study on telecommunication companies (Telkom, Indosat, XL and Smartfren) registered in IDX period 2011-2016.

2. Literature Review, Hypothesis and Methodology

2.1 Economic Value Added (EVA)

EVA is calculated as the difference between the Net Operating Profit After Tax (NOPAT) and the Opportunity Cost of Invested Capital. Value Opportunity Cost of Invested Capital is determined by multiplying the Weighted Average Cost of Debt and Equity Capital (WACC) and the amount of capital invested or Invested Capital (IC) ([http://sternvaluemanagement.com/intellectual-property-joel-stern /proprietary-tools-value-creation/](http://sternvaluemanagement.com/intellectual-property-joel-stern/proprietary-tools-value-creation/)).

EVA defined as the net operating profit after tax (NOPAT) with capital expense for the period (the product of the company's capital cost and capital invested at the beginning of the period) [5].

$$\text{EVA} = \text{NOPAT} - (\text{WACC} \times \text{Invested Capital}) \quad (1)$$

NOPAT = Net Operating Profit After Tax
WACC = Weighted Averaged Cost of Capital

2.2 Earning Per Share (EPS)

EPS information of a company shows the amount of net profit the company is ready to share for all shareholders of the company [17:241]. The higher the profit earned, will attract investors to buy shares of the company, it will cause the company's stock price increase. EPS has a positive effect on stock price changes. If the EPS increases expected stock prices will rise, and changes in stock prices will be positive.

$$\text{EPS} = \frac{\text{Net income} - \text{Preferred Divident}}{\text{Average Common Share}} \quad (2)$$

2.3 Return On Asset (ROA)

ROA is one of the ratios that become a measure of corporate profitability [3:61]. ROA is used to measure a company's ability to create profits from assets controlled by management. The higher the ROA value indicates that the company's performance is getting better.

$$\text{ROA} = \frac{\text{net profit after tax}}{\text{total Assets}} \quad (3)$$

2.4 Return On Equity (ROE)

ROE is the ratio of net profit after tax to equity / net worth, which measures the rate of return on the shareholders' capital invested into the company [3:69].

$$\text{ROE} = \frac{\text{net profit after tax}}{\text{shareholder's equity}} \quad (4)$$

2.5 Market Value Added (MVA)

MVA defined as follows: "A cumulative measure of corporate performance that looks at how much a company's stock has added to (or taken out of) investor's pocketbooks over its life and compares it with the capital those same investors put into the firm" [2].

MVA is used to measure how much wealth a company has created for a given moment. MVA can be calculated as follows:

$$\text{MVA} = \text{Company value} - \text{Invested Capital} \quad (5)$$

Company value is the market value of the company's debt and equity (number of shares outstanding multiplied by share price). Invested capital is the sum of all funds invested in it.

2.6 Hypothesis and Methodology

This research see relationship between EVA, EPS, ROA and ROE to company value in market (MVA) with object of telecommunication operator companies listed in IDX (Telkom, Indosat, XL and Smartfren). The company's financial statements for the period 2011 - 2016 are used as secondary data to analyze these variables.

2.6.1 Conceptual Model

Conceptual model of thinking framework used to analyze the between EVA and EPS, ROA, ROE to MVA can be seen in the following figure.

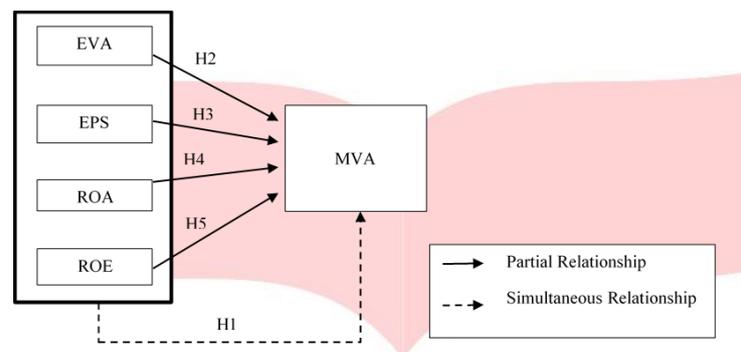


Figure 1. Conceptual Model

2.6.2 Hypothesis

Hypothesis in this study:

1. EVA, EPS, ROA, ROE have significant relationship to MVA.
2. EVA have significant relationship to MVA.
3. EPS have significant relationship to MVA.
4. ROA have significant relationship to MVA.
5. ROE have significant relationship to MVA.

2.6.3 Scope of Research

1. Research variables:
 - a. Independent Variables: EVA, EPS, ROA and ROE.
 - b. Dependent Variable: MVA.
2. Research Object: Secondary data on the financial statements of telecommunication operators listed on IDX (TELKOM, Indosat, XL and Smartfren).
3. The data used as secondary data in the Financial Statements for period years of 2011-2016.

2.6.4 Methodology

Data Panel Regression used in this research is as follows:

$$Y_{it} = a + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \varepsilon \quad (6)$$

Y = Market Value Added (MVA) firm i year t

a = coefficient Constants

$\beta_1, \beta_2, \beta_3, \beta_4 \dots$ = Regression coefficients on each variable

X_{1it} = Economic Value Added (EVA) firm i year t

X_{2it} = Earning Per Share (EPS) firm i year t

X_{3it} = Return on Assets (ROA) firm i year t

X_{4it} = Return on Equity (ROE) firm i year t

ε = Error, variable interference

3. Result and Analysis

3.1. Regression Analysis

Based on methodology, variables values will proceed statistically with data panel regression, which descriptive statistic is shown on Table 1.

TABLE 1 DESCRIPTIVE STATISTIC

Descriptive	EVA	EPS	ROA	ROE	MVA
Mean	5.68E+11	61.49000	1.460639	-4.357296	2.76E+13
Median	5.66E+10	53.51500	0.783323	2.141795	-6.48E+12
Maximum	4.06E+12	669.1900	16.48753	27.41497	2.47E+14
Minimum	-1.18E+12	-511.9700	-19.51964	-83.09865	-2.52E+13
Std. Dev.	1.46E+12	268.5453	10.44948	30.33716	7.26E+13
Skewness	1.245289	0.082920	-0.101928	-1.115843	1.791821
Kurtosis	3.248201	3.332590	2.154666	3.706125	5.151183

Before doing data panel regression should checked by statistical testing to choose the correct panel data regression models whether it is better to use the Common Effect Model or Fixed Effect Model model using Chow Test.

TABLE 2 CHOW TEST

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.835739	(3,16)	0.4938
Cross-section Chi-square	3.493730	3	0.3216

The result shows Prob. Chi-square for the Chow test estimation is 0.3216. Because the value > 0.05 , then the model used is the model Common Effect Model.

The next test is to determine whether the model Common Effect Model or Random Model with Hausman test can not be implemented due to limited data, where the cross section data is less than the number of variables. So, we conclude for the data regression using Common Effect Model.

Furthermore, using data panel regression analysis shows result as follows:

TABLE 3 REGRESSION ANALYSIS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.67E+12	3.83E+12	-0.435498	0.6681
EVA	43.22148	5.480052	7.887058	0.0000
EPS	-1.19E+10	2.07E+10	-0.574597	0.5723
ROA	1.88E+12	1.23E+12	1.525046	0.1437
ROE	-6.53E+11	2.72E+11	-2.396825	0.0270
Weighted Statistics				
R-squared	0.856518	Mean dependent var	1.06E+13	
Adjusted R-squared	0.826312	S.D. dependent var	5.01E+13	
S.E. of regression	2.13E+13	Sum squared resid	8.59E+27	
F-statistic	28.35527	Durbin-Watson stat	1.439052	
Prob(F-statistic)	0.000000			

It shows on coefficient variables EVA and ROA have positive value indicating a direct relationship to MVA. Otherwise, variables EPS and ROE have negative value indicating non-directional relationship.

To check determination between independent variables (EVA, EPS, ROA, ROE) to MVA shown on value Adjusted R-Squared 0.826312. It means there is 82.4% relationship by independent variables, and the rest by other unknown variables.

3.2 Hypothesis Testing Analysis

3.2.1 Simultan Correlation Analysis (F-Test)

From the table 3 above, as shown Prob. F-statistic is 0.0000, which is < 0.05 . Thus H_0 is rejected.

It can be concluded that on simultan analysis there is significant relationship between independent variables EVA, EPS, ROA, and ROE to dependent variable MVA.

3.2.2 Partial Correlation Analysis (t-test)

From the table 3 above for t-statistic was shown Prob. < 0.05 only variables EVA and ROE, the others EPS and ROE > 0.05 .

It could be concluded for partial analysis, EVA and ROE have significant relationship to the dependent variable of MVA, but EPS and ROA have no significant relationship.

4.2 Discussion

Based on the statistical analysis of the above, then this section discussion further to determine relationship of each independent variables (EVA, EPS, ROA, ROE) to the dependent variable (MVA).

4.2.1 Relationship EVA to the MVA

Based on statistical data analysis above, EVA independent variable has significant relationship on MVA dependent variable. This shows the management in the telecommunications industry such EVA as based value would increase the value of companies in the market (MVA).

It is also consistent with prior research Kangarlouei et al [4], Kurmi and Rakshit [6], Nakhaei and Norhan [9], Roze et al [13], Sakhivel [14], Pinto and Santos [12] and Sharma and Kumar [15], which shows EVA has a significant relationship to MVA.

The results of this study are different from the results of Niresh and Alfred [10] which convey EVA has no effect on MVA. This difference can be due to differences in time and the object under study so that the behavior of the industry is also different.

For the telecommunications industry in Indonesia still has a chance to grow by an average of 8%, the management company telecommunications operators to manage the economic value of the company, it will ensure higher profits amount to be received by investor.

4.2.2 Relationship EPS to MVA

From the results of statistical data analysis above, shows independent variable EPS has no significant relationship to dependent variable MVA.

It is contrast with the previous studies in which Sharma and Kumar [15] delivered EPS has a significant relationship to MVA, as well as Prasad and Shrimal [11] and Roze et al [13]. The results of this study is similar to DeWet [1] which showing EPS has no significant relationship to MVA.

The EPS value describe the amount of net profit distributed to shareholders / investors. If related to the performance of telecom operators, statistical analysis shows that investors are not affected by the EPS value of the company, it is also because of the tight competition for the telecommunications market, which makes most operators, except Telkom, can not provide the positive value of EPS to shareholders.

4.2.3 Relationship ROA to MVA

From analysis of the statistical data above, shows independent variable ROA does not have a significant relationship to dependent variable MVA.

The results of this study differs from previous studies De Wet [1] states that the ROA has a significant relationship to MVA, as well as Roze et al [13]. For the study of Nakhaei and Norhan [9] which convey no significant relationship of ROA and MVA, in accordance with the results of this study.

ROA value describes the ability of the company to generate profits from the management of all assets owned, where companies could manage assets well, then made company as fundamental in health state. For telecommunication operators on 2011-2016 period, such as Smartfren and Indosat companies are not yet fully capable to deliver positive asset management performance which could not made profits as the investors' wishes. On the other hand, based on the results of these statistics the value of companies in the market is not significantly affected the value of ROA. Therefore investors can see the other value of performance than ROA variable to assess the company in the market.

4.2.4 Relationship ROE to MVA

From the analysis of the statistical data above, shows independent variable ROE have a significant negative relationship to dependent variable MVA.

From previous research Kangarlouei et al [2012], Roze et al [13] and Prasad and Shrimal [11] showed a significant positive value, slightly different from the results of this research. But for research Nakhaei and Norhan [9] showed significant negative, in accordance with the results of this study.

The ROE value provides an overview of the company's ability to generate net profits based on shareholder value books, and it is often used in comparing companies for good investment opportunities and cost-effective management. In the period 2011-2016, companies have negative values are Smartfren throughout the period, for Indosat during 2013-2015, XL in 2014, which different from Telkom have positive value during period.

With statistical analysis showing ROE has a significant but differentiated (negative) relationship with the MVA value, it gives a picture of the investor in the telecommunication industry responding differently to the company's value towards ROE value achievement. It is also because the negative achievement for ROE, so it give a negative response to the market value of the company.

4. Conclusion

This study research on the relationship between Economic Value Added (EVA), Earning Per Share (EPS), Return on Asset (ROA), and Return on Equity (ROE) to Market Value Added (MVA) in the telecommunication operator companies which listed in IDX period 2011-2016.

The results indicate there are significant relationship simultaneously between variables EVA, EPS, ROA, and ROE to MVA. Partial analysis result, variables EVA and ROE have significant relationship to MVA, and variables EPS and ROA have no significant relationship.

Suggestion to the management of companies needs to keep focused on improving the performance of the company, as good performance will increase the company value in the market (MVA). Investors in responding to the company's market value (MVA) of telecommunication operators (Telkom, Indosat, XL and Smartfren) need to consider the financial performance analysis results especially on EVA besides accounting profit variables such as ROA, ROE and EPS.

Need further research to see component of performance variable besides EVA, EPS, ROA, ROE which relationship to MVA value of telecommunication industry company in Indonesia.

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