

Financial Ratio Relationships: Evidence from Indonesia

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Abstract: *This study aims to investigate the influence of financial ratios Return on Assets (ROA), Return on Equity (ROE) and Economic Value Added (EVA) companies listed Indonesian Stock Exchange. Samples companies in this study categorized Jakarta Islamic Index over the period 2004-2014. In order to determine the effect of financial ratios ROA, ROE and EVA, the writer used descriptive quantitative analysis using panel data regression models OLS panel data and panel data models MET. From research conducted it can be concluded that the Return On Asset (ROA), ROE and EVA has a relationship positif and negative touch when using OLS model comparison and MET.*

Keywords: Return on Assets, Return on Equity, Economic Value Added, Data panel.

1. Introduction

If we look at the financial performance is one important factor for investors in choosing which investment he will use, whether they are going to invest in shares or in the form of loans and term loan in particular. Financial ratios and financial performance is a measurement tool in assessing the success of a company's business activities or an organization with legal status for a certain period. Usually, financial analysts give some recommendations commonly used to measure financial performance, among other is financial ratios such as liquidity ratios, activity ratios, leverage ratios, profitability ratios (return on assets and return on equity) and the ratio of stock market prices, for example.

Although it has been widely used by investors as one of the bases in making investment decisions because the value contained in the financial statements, the use of financial ratio analysis as a measure of accounting has a major drawback, namely ignore their capital costs making it difficult to know whether a company has managed to create value or no. To overcome such drawbacks developed a new concept of Economic Value Added (EVA), which attempts to measure the value-added (value creation) generated a company by reducing the burden of the cost of capital (cost of capital) incurred as a result of investments made are done.

EVA method was first proposed by G. Bennett Stewart and Joel M. Stern, in 1991. In Indonesia, a method known as a method NITAMI EVA (Economic Value Added). According to G. Bennett Stewart, III (The Quest for Value, 1999: 2): "EVA is operating profits less the cost of all of employed to produce Reviews those earnings". EVA is a measure of corporate performance that emphasizes the use of the cost of capital used in the operation of the company. EVA is the profit (loss) is obtained after reducing the operating profit after tax to the cost of capital where the entire equity capital and liabilities included therein. EVA ways to measure the performance of the company is to reduce the operating profit after tax burden of capital costs (Cost of Capital), where the burden of the cost of capital reflects the level of risk companies. EVA is the company's goal to increase the value or the value added of capital that has been invested shareholders in the company's operations. Therefore, EVA is

the difference between operating profit after tax (Net Operating Profit After Tax or NOPAT) and capital costs (Cost of Capital).

Conceptually, EVA is profit remaining (residual income) profits from the company after deducting the cost of capital (Cost of Capital) is invested to generate such profits. Companies that have a positive EVA value indicates that the company is able to increase the wealth of its shareholders because it produces a rate of return that exceeds the rate of cost of capital. Conversely, a negative EVA indicates the value of the company decreased due to a lower rate of return than the cost of capital.

EVA concept is a concept of fairness in assessing the performance of the company. Fair here implies that the concept of EVA, capital or operating funds is calculated based on the funds obtained by the company from several sources. So that the EVA, the amount of capital (Cost of Capital) multiplied by the funds raised. The weighted capital calculation is to determine the degree of fairness for providers of funds (creditors and shareholders) such as Billy Widayanto opinion. "Economic value added is based on the concept that the measurement of a company's profit, we must fairly consider the expectations of each fund provider (creditors or shareholders)". Justice degree is expressed by the size of the weighted (Weighted Average Cost of Capital or WACC).

Alternative methods offered by Stern Stewart EVA Co. seems to promise many advantages that its use has been so widespread in the United States. Fortune magazine annually lists companies in the United States are considered to create additional wealth for shareholders based on the EVA achieved by these companies. Application of EVA in Jakarta Islamic Index to assess financial performance is a rare thing done by a couple of researchers because during the performance measurement Jakarta Islamic Index (JII) is done by comparing the average stock returns generated by JII with market return.

From the above it can be seen that the application of EVA in assessing financial performance has a very important role as a source of information that can be used for analysis using

financial ratios. Thus, this study attempts to explore the method's ability financial ratios (ROA and ROE) and EVA positive effect. Besides, the research is intended to carry out further testing of previous empirical findings on the application of EVA and financial ratios consistent effect on stock prices of some companies listed on the Jakarta Islamic Index "(now Indonesia Islamic Index). This study is a replication of previous studies but nothing to distinguish from this study, which is the object of the sample as well as the timing of the price of existing shares.

The object of this research companies listed on the Jakarta Islamic Index (JII); (Now Indonesia Islamic Index) during the years 2004 to 2014, it is intended to facilitate researchers in pengelolaan the data with the time constraints that exist and in order to be more specific in the study. Based on the description above as well as thinking writers interested in researching about researching on the effect of financial ratios (ROA and ROE) and EVA in a company registered in JII (now Indonesia Islamic Index) in the period 2004-2014.

2. Literature Review

Some research about the company's financial performance measurement method has been carried out in Indonesia, among others: Miranda, Yuliana, and Thio test whether the method of measurement of financial performance EVA, ROI and OCF significant effect on the Rate of Return on the 50 companies listed on the JSE in 2001 and we concluded that the measurement of performance with the conventional concept and the concept of Economic Value Added has a significant effect on the rate of return on investment, with a significance level of ROI, OCF, EVA respectively by 6.7%, 0.4%, 8.8%, far below the 10% significance level. This shows the EVA has a correlation with stock returns slightly better than ROI and OCF.

Pradhono and Julius, analyze the influence of Economic Value Added, Residual Income, Earnings and operating cash flow to the return earned by shareholders on consumer goods manufacturing companies listed on the JSE in 2000-2002 with a sample of 34 companies. The results obtained showed that the only variable earnings and operating cash flow effect on stock returns received by shareholders with a significance level of 0.046 and 0.025 t and r2 respectively by 3.9% and 4.9%. While the variable EVA and Residual Income does not affect the stock return.

Solikhah Nur Rohmah and Rina Trisnawati (2005) examine whether there is influence jointly profitability (ROA, ROE, ROS) and EVA (Economic Value Added) company to return shareholder tobacco companies from 1994-1999 and the conclusion that the vari- The variables do not have a significant influence. That is, changes in shareholders' returns are influenced by other factors not included in other EVA penelitian. Research was also conducted by Surifah and Nuri Hidayah, namely on "The Effect of accounting information companies are air-conditioned EVA-positive and negative EVA on stock price changes ". This paper was published in the journal study published Business School of Economics Widya Wiwaha. However, in contrast to previous studies, this study showed no significant effect between EVA and stock prices.

The research which examines EVA and profitability ratios is the research conducted by Noer Saso and Nila Wulandari, entitled "Effect of EVA and Ratios Profitability on stock price". The results showed that EVA and profitability ratios have no effect on stock prices. Stock prices are influenced by other factors not included in the study.

3. Research Hypothesis

Based on the formulation of the above problems, as a temporary answer research hypotheses can be formulated as follows:

Ha1: ROA, ROE and EVA have a positive effect by using a common model of panel data.

Ha2: ROA, ROE and EVA have a positive effect by using panel data models MET.

4. Data and Methodology

Time Research

This research was conducted by the author at the time of March to June 2015.

Types of Research

The type of research to be conducted in this research is applied research with quantitative approach based on secondary data explanatif the form of financial statements of public companies listed on the Jakarta Islamic Index as well as the annual stock price data. Environmental research is in the form of a field study.

Sampling Techniques

This sampling technique is purposive sampling or sampling techniques with particular consideration. Only elements of the population who meet certain criteria of research that could be used as a sample. Therefore, a sample of companies included in JII must meet the following criteria:

- a) Companies listed on the JSE that have financial data are complete and reliable truth from the period 2004 to 2014.
- b) These companies are not delisting on the Stock Exchange during the study period.
- c) Companies whose shares are actively traded on the Stock Exchange in 2004 until 2014.
- d) The Company does not include in a state of loss.
- e) Companies, is consistently included in the list of JII during the study period.

Sources of Data

The data is set value of facts or objects believed to be correct. The data used in this research is secondary data. This secondary data in the form of annual financial statements and stock price information from the company sample obtained through the Jakarta Stock Exchange Corner UII and Indonesian Capital Market Directory (ICMD). Data after the can first processed by author.

Data Analysis Techniques and Definitions Variable Operational Research

Data Analysis Techniques Research

In panel data, the same cross section is observed by time (Gujarati, 2004). Panel data is a combination of types of data time series and cross section so that the panel data is the data that has dimensions of time and space. Other names such

data panel: Pooled Data, combination of time series and cross section data, the micropanel the data, longitudinal data, the event history analysis, or cohort analysis. Some of the advantages in using panel data include: Heterogeneity, more informative, varied, a greater degree of freedom and more efficiently, avoiding multicollinearity problems, excelled in studying the dynamic changes, it can detect and measure the effects of which can not be observed in the data cross section of pure or pure time series, can be used to study behavioral models, and minimize bias. While the general shape of the panel regression model data can be defined by the following equation

$$ROA_{it} = \beta_1 + \beta_2 ROE_{2it} + \beta_3 EVA_{3it} + U_{i(1)}$$

Where:

i = 1,2,3,, N (dimensional cross section)

t = 1,2,3,, T (dimension time series)

Y_{it} = variable dependent on the unit i and time t

□ = constant

□ = constant of the independent variable at time t and unit I

uit = error

If any cross unit has a number of observation time series are the same then referred to as a balanced panel. Conversely, if the number of different observations for each cross section unit called unbalanced panel.

Difficulties that may be found in estimating panel data is in identifying t - ratios or f - stat from the regression models that can occur when only seditkit number of observation cross section with plenty of time series data. It can be done several approaches in the calculation mengefiansikan panel data regression model. These approaches are (1) Method of Common-constant or The polled OLS method (2) Method of Fixed Effect or Fixed Effect Model and (3) Method or Random Effect Random Effect Model.

Common methods-Constant (Pooled Ordinary Least Square)

The modeling approach with the usual OLS method is the simplest method to estimate the method assumes every company have the same slope and coefficient (there is no difference in the dimensions of the cross section). So it can be said that the constant alpha value and the same data for each cross section data means data panel regression results produced will apply to every company.

Fixed Effect Method (Fixed Effect Model)

In the method of fixed effect, intercept in the regression model can be distinguished between individual because each individual cross section is deemed to have its own characteristics. In interceptnya can be used to distinguish a dummy variable so that this method is also known as the least square dummy variable (LSDV) Model. However, the disadvantage of this method while the greater number of cross section data will make greater degress of freedom to introduce N dummies. There are several possibilities in this method, namely (1) All constant coefficients according to time and individual (2) Slope coefficients fixed, but the intercept to vary between individuals (3) Slope Intercept coefficient fixed but vary between individuals across time (4) all coefficient (slope and intercept) differ between individuals (5) All coefficient (slope and intercept) differ between individuals inter intercept time between different individuals, it can be used a dummy variable differential. Then to rewrite the equation in the early models of data panel above equation can be written as:

$$Y_{it} = \alpha_1 + \alpha_2 D_{2i} + \alpha_3 D_{3i} + \alpha_4 D_{4i} + \beta_2 X_{2it} + \beta_3 X_{3it} + U_{it(2)}$$

Due to the data owned by having the amount of time (T) is greater than the number of individuals (N) it is advisable to use common models and MET. Mathematically general and MET models in panel data model expressed as follows:

a) The dependent variable is denoted as a variable Y for the i-th individual and wktu all t.

a. The independent variable is denoted as a variable X for the individual all-i and time to t:

- | | |
|--|------------------|
| 1. ROA (<i>Return on Asset</i>) | = Y ₁ |
| 2. ROE (<i>Return on Equity</i>) | = X ₂ |
| 3. EVA (<i>Economic Value Added</i>) | = X ₃ |

5. Results and Discussion

Summary Statistic

In accounting and finance research, the model is very much a model financial ratios used mainly to examine the relevance of the data value and financial accounting data. The first results of the manufacturing of panel data regression with the variables using the ROE and EVA as variables affecting ROA as follows:

Table 1 : Panel Data Model With OLS

Dependent Variable: ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROE	0.373244	0.006221	59.99422	0.0000
EVA	5.952010	1.090109	0.547885	0.5838
R-squared	0.312477	Mean dependent var		0.120377
Adjusted R-squared	0.312107	S.D. dependent var		0.092730
S.E. of regression	0.076910	Akaike info criterion		-2.291290
Sum squared resid	10.98439	Schwarz criterion		-2.285343
Log likelihood	2131.754	F-statistic		844.0012
Durbin-Watson stat	0.418705	Prob(F-statistic)		0.000000

Table 1 shows the results of analysis models using OLS test panel data models that describe the relationship between the ROA, ROE and EVA, by using signifika α level of 5%.

With the OLS model turns R^2 in the can is equal to 31.24. Watson durbin Statistics figures showed 0.41, which means there is positive serial correlation in the equation ROA, ROE and EVA. Besides, we also can see that the sum of square residual (SSE) of the OLS amounted to 10.9843. ROE value of the independent variable is statistically significant at $\alpha =$

5%. That is, ROE has a significant effect on ROA. For EVA independent variables were not significant, of the model above we can conclude several things, among others: OLS model indicates a positive relationship between changes in ROE and ROA EVA with changes. Any change 1 point ROE will increase the value of ROA by 0.3732 points. Any change 1 point EVA will increase the value of ROA amounted 5.952

Table 2 : Panel Data Model With MET

Dependent Variable: ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.045471	0.003097	14.68244	0.0000
ROE	0.285373	0.008409	33.93580	0.0000
EVA	-4.910209	1.100109	-4.471575	0.0000
R-squared	0.384440	Mean dependent var		0.120377
Adjusted R-squared	0.379766	S.D. dependent var		0.092730
S.E. of regression	0.073030	Akaike info criterion		-2.387866
Sum squared resid	9.834665	Schwarz criterion		-2.343263
Log likelihood	2234.521	F-statistic		82.26032
Durbin-Watson stat	0.375883	Prob(F-statistic)		0.000000

Table 2: shows the results of the model analysis using panel data test MET models that explain the relationship between the ROA, ROE and EVA, by using signifika α level of 5%

By using the model of the MET value of R^2 turns 38,44%, if we compare it with the value of R^2 with 31,24 OLS models, greater R^2 with MET models. MET models but not necessarily better than the OLS model. If we look at the value of ROE and EVA turns a significant probability, which means that the ROE and EVA have a significant effect on ROA. Based on the second research hypothesis that the ROA, ROE and EVA have the positive relationship, but from the display output to the value of EVA has a negative correlation to the ROA.

Judging from the results of the model of the MET value of the independent variable ROE and EVA statistically significant at $\alpha = 5\%$. That is, ROE and EVA have a significant effect on ROA. From the model above we can conclude several things, among others: by using a model of MET showed a positive correlation between the change in ROA and ROE to change negative correlation between changes in EVA with changes in ROA. Any change 1 point ROE will increase the value of ROA by 0.2853 points. Any change 1 point EVA will reduce the value of ROA of -4.9102.

6. Concluding Comments

It can be concluded that between ROE and EVA have a positive relationship with the OLS models and negatives with MET models. If there is an increase of 1,000 will raise ROE, ROA amounted to 3,732.44 with OLS models. If there is an increase in ROE by 1000 it will raise the ROA amounted to 2,853.73. This paper discusses the relationship

of financial ratios in existing companies in Indonesia. To investigate the relationship between ROA, ROE and EVA author uses panel data tests test, to see the relationship between financial ratios. There are positive and negative relationship between financial ratio variables studied. Finally, this study suggests is based on financial statement data is used at December 31, 2004 to 2014, the presence of these relationships indicate that the financial ratio used component can be used as a measuring tool in assessing the relationship between the increase and decrease of the variable. Research shows that the relationship between financial ratios are used, there is a positive impact and negative. Results can only be applied to a particular sample and are inconclusive for other research. Follow-up studies may be able to extend to the various models of financial ratios sharing.

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