The Effect Of Economic Value Added And Earning Per Share To Stocks Return (Panel Data Approachment)

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ABSTRACT : *The purpose of this study is to examine the effect of Economic Value Added (EVA) and Earning per Share (EPS) on stocks return. This study was taken because there are still differences between the research study with each other. This research was conducted using secondary data. Population in this research was a with time company incorporated in the index LQ 45 in Indonesian Stock Exchange period 2013-2014. Sampling technique using was purposive sampling. There are 21 companies to analyzed. This study using multiple regression with panel data. Results shows that Economic Value Added (EVA) have positive significant effect on Stock Return, while Earning Per Share (EPS) also have positive significant on Stock Return. Adjusted R Square value was 0,395091 means 39,50% can explained by the independent variable, while 60,50% are influenced by the other variables which have not been included in the research model.*

Keywords *: Stocks Return, Economic Value Added, Earning Per Share, Multiple Regression, Panel Data*

I. INTRODUCTION

In the era of free market economy, an increasingly competitive business world, so that requires companies to be able to adapt in order to avoid bankruptcy and ahead of the competition. One of the important information from the financial statements that are often used by investors as a major determinant of investment decisions is the company's performance.

The management performance (achievement) measure can compare with the various types of different industries and not on a similar type of industry. One technique for measuring a company's financial performance by comparing of various kinds is through Economic Value Added (EVA). EVA first introduced by Stern Stewart and Co. Emipirical studies concerning Economic Value Added (EVA) as an indicator of the company's performance appraisal has been done both among colleges and among practitioners of economics, as well as an assessment of the relationship EVA with stock prices. However, there are some studies that the results vary. Some claimed there was no correlation between EVA with stock prices, but there is also a relationship between the two states, whether they are positive or negative, for example, Olsen, 1996; Peterson and Peterson, 1996; DeVilliers and Auret, 1997; Kramer and Pushner, 1997; Chen and Dodd, 1997; Turvey and Sparling, 2003; Turvey et al., 2000.

Besides measuring performance could also use the information from Earnings Per Share (EPS), where performance is measured by the amount of profit achieved. In principle, the more achievements (performance) of the company to generate profits will increase demand for shares of the company with the resut the stock price will increase. (Biddle et al, 1995).

II. LITERATURE REVIEWS & HYPOTHESIS DEVELOPMENT

EVA and Stock Returns

EVA, as a concept of economic profit, is the result of adjustments to GAAP-based accounting advocated by Stern Stewart and Co. Moreover, the claim that EVA is the main driver for shareholder value has been empirically tested by a number of US studies, giving rather mixed results. A number of these studies report either poor or no statistical relation between EVA and stock return, or between EVA and market value (Olsen, 1996; Peterson and Peterson, 1996; DeVilliers and Auret, 1997; Kramer and Pushner, 1997; Chen and Dodd, 1997; Tuvey and Sparling, 2003; Tuvey et al., 2000). In contrasting findings, Lehn and Makhija (1996, 1997) report that EVA has a "slight edge as a performance measure" compared to other accounting earnings measures. O'Byrne (1996, 1997) shows that EVA explains more than twice as much of the variance in market/capital ratio as NOPAT when the EVA model has positive and negative EVA coefficients. O'Byrne (1996) also showed that EVA changes explain significantly more of the variation in market value changes.

EPS and Stock Returns

Earnings Per Share (EPS) is the ratio between the revenue generated (net income) and the number of outstanding shares. Earnings Per Share (EPS) illustrates the company's profitability is reflected in shares (Cerlienia, 2010). According Darmadji and Hendy (2005) definition of earnings per share (EPS) which is a ratio that shows some of the gains (profits) obtained by investors or shareholders per share. Profit is a measure of the success of a company, because that investors often focus on the magnitude of Earning Per Share (EPS) to analyze shares. The higher the value of EPS of course encouraging shareholders because the greater the profit provided to shareholders. And the higher the profit achieved by the company, the value of the company will increase which in turn will be reflected in the company's stock value (Biddle et al, 1995).

Furthermore, the hypotheses in this research are:

H_1 : There is an effect of EVA to stock returns
H_2 : There is an effect of EPS to stock returns

Figure 1
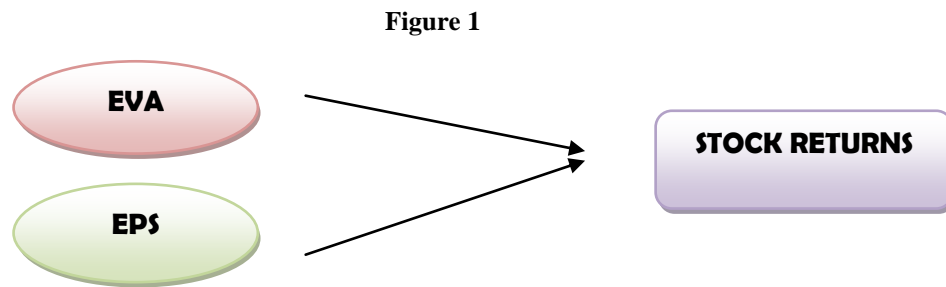
III. METHODS

The data used in this study as the source of the data is in the 2013- 2014 Annual Report, the quality of data obtained from the internet reporting company's website and financial data from the Indonesian Capital Market Directory (ICMD) published by the Institute for Economic and Financial Research (ECFIN). Samples that were taken and used in this study were from companies listed as LQ 45 index within range from 2013-2014 on the Indonesia Stock Exchange (IDX). The number of samples in this study were 21 companies.The sample is a purposive sampling to obtain a sample that can represent the specified criteria. The criteria as following:

Table 1
Samples Criteria

Companies listed in Indonesia's LQ45 2013-2014	58
Companies are not consistently listed in Indonesia's LQ 45 2013-2014	(27)
Companies who do not publish audited financial statements 2013-2014	0
Companies that present financial statements are denominated in dollars	(1)
Companies that data is incomplete financial statements	(9)
Total samples	21
Year observation (x2 years)	42

Independent Variables
The independent variables in this study is the company performance which are proxied by Economic Value Added (EVA) and Earnings Per Share (EPS).

Economic Value Added (EVA)
Is measurement of company's value added by reducing the burden of the cost of capital arising from the investments that has been made.
where :
EVA = Net Operating Profit after Tax (NOPAT) - Cost of Capital

Earnings Per Share **(EPS)**
Is the net income after tax. The amount of revenue earned for each share of total income for common shares divided with number of outstanding shares.

where :

$$EPS = \frac{Net\ Income\ after\ Tax}{Outstanding\ Shares}$$

Dependent Variables
The dependent variable in this study is stock returns which the difference between income (loss) suffered by shareholders as the share price is now relatively higher (lower) than the previous stock price.
where :

$$R_i = \frac{P_{ti} - P_{ti-1}}{P_{ti-1}}$$

Control Variables

Size
In this study, measured by the size variable ln (natural log) total assets in 2013&2014. Data were obtained from BEI and ICMD site. Total assets illustrates the size of the company. This size is expected to be an effect on the company's stock returns.

Research Model
To test the hypothesis that has been designed, this study uses one main models. This model is used to investigate the hypothesis H1 & H2 to test the effect of EVA and EPS to stock returns. Here is the research model:

$$\textbf{Stock Returns} = \alpha + \beta_1 \textbf{EVA} + \beta_2 \textbf{EPS} + \beta_3 \textbf{Size} + \textbf{e}$$

where:

Stock Returns = difference in income (loss) suffered by shareholders as the share price is now relatively higher (lower) than the previous share price.

EVA = the value added produced of company from reducing the burden of the cost of capital arising in investment that has been made

EPS = net income after tax divided by the number of outstanding share

Size = ln total assets

Data Analysis
Procedures used in the multiple regression analyzes were conducted to see the effect of Economic Value Added (EVA) and Earning Per Share (EPS) to stock returns with Ordinary Least Square (OLS) using panel data approchement. In the use of panel data, there are three types of approaches that can be used are: Common Effect, Fixed Effect, and Random Effects.

1. Common Effects Model
   Is the simplest model in panel data processing is to perform regression by the method of ordinary least squares (OLS) on a joint data (Pooled). Where N is the number of unit cross section and T is the number of periods of time. By assuming the component error in the processing of ordinary least squares, we can make the estimation process separately for each unit cross section. Thus obtained the same number of T equation. Likewise, we will obtain the equation of time series as much as N equations for each observation. To get the parameters α and β are constant and efficient, shall be in the larger regression by involving as much as NT observation.

2. Random Effect Model
   This model is also called the Error Component Model. Just like the fixed effects model, the model also allows the difference in the value of the intercept parameters and coefficients differ between regions and across time, but expressed in error. The disruption of this model is assumed to be random for the entire population. This model also result in that individual errors are not correlated with each other, as well as error combination. By using a random effects model, we can save the use of degrees of freedom and does not diminish in number as the fixed effect model. This has implications for parameter estimation result will be more efficient.

3. Fixed Effect Model
   This model is also called Least Square Dummy Variable Model. This model approach by inserting a dummy variable to allow for the difference intercept parameter values and coefficients vary between regions and over time. Changes in the dummy variable fixed effect can reduce the number of degree of freedom that ultimately affect the efficiency of parameter estimates.

How to choose one of the three existing approaches above are as follows:

a. Choose between Common Effects Model vs Fixed Effects Model
To choose which model is more suitable between Common Effects Model or Fixed Effects Model, can be used Chow Test (Restricted F-Test).
b. Choose between Common Effects Model vs Random Effects Model
To choose which model is more suitable between Common Effects Model or Random Effects Model, can be used Lagrange Multiplier Test (LM Test).
c. Choose between Fixed Effects Model vs Random Effects Model
To choose which model is more suitable between Fixed Effects or Random Effects, can be used Hausman's Test.

IV. RESULTS

Descriptive Statistics

The object of this study consisted of the variables studied, namely EVA, EPS and stocks return on the company listed on the Indonesia Stock Exchange (IDX) since 2013-2014 as LQ 45 companies. The test results showed descriptive statistics in this study had an average of 0,047803, with a maximum value of 0,492063 for stock returns. The value of EVA has an average of 11,26336 and a maximum value of 326,0182. Meanwhile, EPS has an average of 0,548858 and a maximum value of 2,790190 (**see Apendix Table 1** shows the descriptive statistics of all variables in this research.).

Selection Model

To choose the most suitable model that will be used in research can be carried out by the three tests, as follows:
1. Chow Test: Chow's Test results calculate that Fvalue probability is greater than $\alpha = 0.05$. Conclude that Fixed Effect model was not significant in the data panel. The results of test calculations are performed decision: accept H_0 and conclude that Pooled/Common Effect Model is better than the Fixed Effect Model for the probability value $0.3456 > \alpha$ (0.05).
2. LM test: From LM's Test were performed conclude that accept H_0 and Pooled/Common Effect Model is better than Random Effect Models with probability values $0.0710 > \alpha$ (0.05).
3. Hausman's test: From Hausman's Test were performed conclude that accept H_0 and Random Effect Model is better than Fixed Effect Models with probability values $0,1660 > \alpha$ (0,05).

Thus, after used three test between the Chow Test, LM Test and Hausman's Test, the most appropriate use for panel data test method is Pooled/Common Effect Model as the best model. (**see Apendix Table 2, 3 and 4**)

Hypothesis Testing

For futher, hypothesis testing with data panel, this research use pooled/ common effect model to examine the effect of independent and dependend variables of the research model. (**see Apendix Table 7**). But before the hypotheses testing was conducted, there were BLUE test that has been done. (**see Apendix Table 5 and 6 for Multicolinearity Test, Heteroscedasticity Test and Autocorellation Test**)

From the test results as the table 3 shown that:
* Hypotheses 1 is accepted, the results indicate that the economic value added (EVA) has a significant influence on stock returns. Between EVA and stock returns there is positive relationship ($\beta_1 = 0,029042$). This means that EVA significantly affected stock returns.
* Hypotheses 2 is accepted, the results indicate that the earnings per share (EPS) has a significant influence on stock returns. Between EPS and stock returns there is positive relationship ($\beta_2 = 0,031813$). This means that EPS significantly affected stock returns significant.

Discussion

Based on the test results as described, the discussion will explore the influence of EVA and EPS to stock returns. The two hypotheses of this study is that EVA & EPS affect stock returns. From the test results obtained that EVA and EPS significantly affected to stock returns. So therefore it means that all hypotheses is accepted. The results are consistent with research from Olsen, 1996; Peterson and Peterson, 1996; DeVilliers and Auret, 1997; Kramer and Pushner, 1997; Chen and Dodd, 1997; Tuvey and Sparling, 2003; Tuvey et al., 2000); Lehn and Makhija (1996, 1997). Also inline with research from Biddle et al, 1995 where's the higher profit achieved by the company, the value of the company will increase which in turn will be reflected in the value of shares of the company.

V. CONCLUSION

Based on the results of statistical testing and analysis has been discussed in the previous chapter, it can be concluded as follows:

1. There is a positive significant relationship EVA and stock returns. This proves the first hypothesis is accepted. That there is significant effect between EVA to stock returns for the company. These results suggest that EVA is one of the important variables that determine the returns of companies in Indonesia.

2. There is a positive significant relationship EPS and stock returns. This proves the second hypothesis of this study is accepted. That there is significant effect between EPS to stock returns for the company. These results suggest that EPS also an important variables that determine the returns of companies in Indonesia.

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APENDIX

Table 1
Descriptive Statistic
(n = 42)

	EVA	EPS	Stocks Return	SIZE
Mean	11,26336	0,548858	0,047803	0,7805
Median	1,265346	0,207090	0,011364	0,7882
Maximum	326,0182	2,790190	0,492063	0,8926
Minimum	-38,05021	-0,104410	-0,714233	0,6555

Table 2

Chow Test
(n=42)

Effects Test	Statistic	Prob.
Cross-section F	0,978485	0,5219
Cross-section Chi-square	30,904691	0,0565
Period F	3,316388	0,0853
Period Chi-square	7,102384	0,0077
Cross-Section/Period F	1,207704	0,3456
Cross-Section/Period Chi-Square	36,926675	0,0172

Table 3
LM Test
(n=42)

Null (no.rand.effect) Alternative	Cross-section One-sided	Period One_sided	Both
Breusch-Pagan	0,229057	3,030510	3,259567
	(0,6322)	(0,0817)	(0,0710)

Table 4
Hausman's Test
(n=42)

Test Summary	Chi-Sq.Statistic	Prob.
Cross-section random	3,591746	0,1660

Table 5
Multicolinearity Test

Correlation	EVA	EPS
EVA	1,000000	
EPS	-0,051867	1,000000

Table 6
Heteroscedasticity and Autocorellation Test

Variabel	Coefficient	Std.Error	t-Statistic	Prob.
C	0,144942	0,021236	6,825197	0,0000
EPS	0,026266	0,024719	1,062611	0,2945
EVA	-0,000129	0,000304	-0,423478	0,6743
R-squared	0,033668	Mean dependent var		0,157908
Adjusted R-squared	-0,015887	S.D.dependent var		0,101739
S.E.of regression	0,102544	Akaike info criterion		-1,648294
Sum squared resid	0,410098	Schwarz criterion		-1,524174
Log likelihood	37,61417	Hannan-Quinn criter.		-1,602799
F-statistic	0,679405	Durbin-Watson stat		1,887584
Prob (F-statistic)	0,512817			

Table 7
Hypoteses Testing

Variabel	Coefficient	Std.Error	t-Statistic	Prob.
C	0,060558	0,040229	1,505342	0,1403
EPS	0,031813	0,046825	5,058439	0,0009
EVA	0,029042	0,000576	4,602861	0,0000
Size	0.070507	0,013598	6,048566	0.0002
R-squared	0,366194	Mean dependent var		0,047803
Adjusted R-squared	0,395091	S.D.dependent var		0,237976
S.E.of regression	0,194254	Akaike info criterion		-0,370548
Sum squared resid	1,471655	Schwarz criterion		-0,246428
Log likelihood	10,78150	Hannan-Quinn criter.		-0,325053
F-statistic	11,26650	Durbin-Watson stat		2,080404
Prob (F-statistic)	0,000137			

Tabel 8
Company Lists

No	Kode Efek	Nama Perusahaan	Feb 2013	Agt 2013	Feb 2014	Agt 2014	Sampling
1	AALI	Astra Agro Lestari Tbk	✓	✓	✓	✓	Complete
2	ADRO	Adaro Energy Tbk.	✓	✓	✓	✓	Not Complete
3	AKRA	AKR Corporindo Tbk.	✓	✓	✓	✓	Complete
4	ANTM	Aneka Tambang (Persero) Tbk.	✓			✓	-
5	ASII	Astra Internasional Tbk.	✓	✓	✓	✓	Complete
6	ASRI	Alam Sutera Realty Tbk.	✓	✓	✓	✓	Complete
7	BBCA	Bank Central Asia Tbk.	✓	✓	✓	✓	Not Complete
8	BBNI	Bank Negara Indonesia (Persero) Tbk.	✓	✓	✓	✓	Not Complete
9	BBRI	Bank Rakyat Indonesia (Persero) Tbk	✓	✓	✓	✓	Not Complete
10	BBTN	Bank Tabungan Negara (Persero) Tbk.	✓	✓		✓	-
11	BDMN	Bank Danamon Indonesia Tbk.	✓	✓	✓	✓	Not Complete
12	BHIT	Bhakti Investama Tbk.	✓	✓			-
13	BKSL	Sentul City Tbk.	✓	✓	✓		-
14	BMRI	Bank Mandiri (Persero) Tbk.	✓	✓	✓	✓	Not Complete
15	BMTR	Global Mediacom Tbk.	✓	✓	✓	✓	Complete
16	BSDE	Bumi Serpong Damai Tbk.	✓	✓	✓	✓	Not Complete
17	BUMI	Bumi Resources Tbk.	✓	✓			-
18	BWPT	BW Plantation Tbk.	✓	✓			-
19	CPIN	Charoen Pokphand Indonesia Tbk.	✓	✓	✓	✓	Complete
20	EXCL	XL Axiata Tbk.	✓	✓	✓	✓	Complete
21	GGRM	Gudang Garam Tbk.	✓	✓	✓	✓	Complete
22	GIAA	Garuda Indonesia Tbk.	✓				-
23	HRUM	Harum Energy Tbk.	✓	✓	✓	✓	Not Complete
24	ICBP	Indofood CBP Sukses Makmur Tbk.	✓	✓	✓	✓	Complete
25	IMAS	Indomobil Sukses International Tbk.	✓	✓			-
26	INCO	Vale Indonesia Tbk.	✓	✓		✓	-
27	INDF	Indofood Sukses Makmur Tbk.	✓	✓	✓	✓	Complete
28	INDY	Indika Energy Tbk.	✓				-
29	INTP	Indocement Tunggal Prakasa Tbk.	✓	✓	✓	✓	Complete
30	ITMG	Indo Tambangraya Megah Tbk.	✓	✓	✓	✓	Not Complete
31	JSMR	Jasa Marga (Persero) Tbk.	✓	✓	✓	✓	Complete
32	KLBF	Kalbe Farma Tbk.	✓	✓	✓	✓	Complete
33	LPKR	Lippo Karawaci Tbk.	✓	✓	✓	✓	Complete
34	LSIP	PP London Sumatra Indonesia Tbk.	✓	✓	✓	✓	Complete
35	MAIN	Malindo Feedmiil Tbk.	✓	✓	✓		-
36	MAPI	Mitra Adiperkasa Tbk.	✓	✓			-
37	MNCN	Media Nusantara Citra Tbk.	✓	✓	✓	✓	Complete
38	PGAS	Perusahaan Gas Negara Tbk.	✓	✓	✓	✓	Not Complete
39	PTBA	Tambang Batubara Bukit Asam (Persero) Tbk.	✓	✓	✓	✓	Complete
40	SMCB	Holcim Indonesia Tbk.	✓	✓			-
41	SMGR	Semen Indonesia (Persero) Tbk.	✓	✓	✓	✓	Complete
42	SSIA	Surya Semesta Internusa Tbk.	✓	✓	✓		-
43	TLKM	Telekomunikasi Indonesia (Persero) Tbk.	✓	✓	✓	✓	Complete
44	UNTR	United Tractors Tbk.	✓	✓	✓	✓	Complete

45	UNVR	Unilever Indonesia Tbk.	✓	✓	✓	✓	Complete
46	MLPL	Multipolar Tbk.		✓	✓		-
47	PWON	Pakuwon Jati Tbk.		✓	✓	✓	-
48	WIKA	Wijaya Karya Tbk.		✓	✓	✓	-
49	ADHI	Adhi Karya (Persero) Tbk.			✓	✓	-
50	CTRA	Ciputra Development Tbk.			✓	✓	-
51	PTPP	PP (Persero) Tbk			✓	✓	-
52	SMRA	Summarecon Agung Tbk.			✓	✓	-
53	TAXI	Express Trasindo Utama Tbk.			✓	✓	-
54	TBIG	Tower Bersama Infrastructure Tbk.			✓	✓	-
55	VIVA	Visi Media Karya Tbk.			✓		-
56	WSKT	Waskita Karya (Persero) Tbk.			✓	✓	-
57	LPPF	Matahari Departement Store Tbk.				✓	-
58	SCMA	Surya Citra Media Tbk.				✓	-
		TOTAL SAMPLE					**21**