



## THE CREATION OF FINANCIAL PERFORMANCE BASED ON THE ECONOMIC VALUE ADDED PERSPECTIVE: A CASE OF INDONESIAN ESTATE FIRMS

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### ABSTRACT

*This study examined the valuation of financial performance from 13 Indonesia Estate Firms. The valuation involves eight key performance indicators which are based on accounting principles including Return on Equity, Return on Investment, Total Asset Turnover, Cash Ratio, Current Ratio, and others. Those indicators are combined with indicators weighted to be as Financial Health Score. Both the indicators could be improved simultaneously, but whether the improvement always valuable or not? To answer this question, Economic Value Added (EVA<sup>TM</sup>) was employed to measure shareholder value. Financial reports of 13 firms from the period of 2002 to 2011 are selected. Nine hypotheses were proposed to examine the relationship between performance indicators and financial health score to EVA<sup>TM</sup>. Each hypothesis was tested under Seemingly Unrelated Regression (SUR) model. The findings indicate that all tested hypotheses show significant relationship. However, it can be identified that the creation of financial performance based on accounting method, it would disclose the shareholder value. But EVA<sup>TM</sup> method demonstrates that actually some companies suffer a loss of their value although the financial performance improved.*

**Keywords:** Estate firms, Financial performance, Financial health, Economic value added, Profitability, Liquidity, Solvency.

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### 1. INTRODUCTION

Most business practitioners and researchers agree that the primary objective of a business is to create value for both shareholder and society (Bursaitiene, 2009; Morard and Balu, 2009; Yao *et al.*, 2009). In practice, the best efforts for the business owner is to direct action to obtain added value and provide benefits to the broader stakeholders. The financial performance valuation is a process which can help executives to drive and control their business, but it becomes a weakness if they do not consider the importance of value creation.

Valuation of financial performance could be approached by accounting and or economic method. Companies that utilize accounting method usually combine several metrics as core indicators e.g. return on equity, return on investment, total asset turnover, cash ratio, current ratio, collection period, inventory turnover, etc. These indicators enable executives to raise value added in their business decisions (Chen and Dodd, 1997). Otherwise, companies using economic methods are sufficient to use a single metric for example, economic value-added as a single factor of value creation. Economic method also provide some useful insight (Visaltanachoti *et al.*, 2008) help companies in resolving agency conflict (Young, 1997) and has more explanatory power to the shareholder value (Haddad, 2012) although it is still debatable (Arabsalehi and Mahmoodi, 2012). Regardless which one is best used, the problem is neither individual company nor alliance able to migrate their method easily for several motives

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(McLaren, 2003; Satish and Rau, 2009). Here, it is assumed that Estate Crop - State Owned Enterprises (SOE, 2012) of Government of Indonesia (GOI) is in such situation. In this case, the government's policy became one of this limitation since the Indonesian government is obliged to carry out a valuation Estate SOE financial performance through accounting framework.

This paper directly addresses this issue: Are companies that steer their business through accounting methods can generate added value for their shareholders? To answer this question, shareholder value as measured by Economic Value Added (EVA™) is conducted. At the same time this analysis is aimed to demonstrate the failure of accounting method in control the cost of invested capital which drives the value creation. The proposed EVA™ analysis is intended as a benchmarking in the financial performance measurement.

As known that, GOI owns 2.230 large estate crop firms in 2010 (BPS-Statistic Indonesia, 2012). Among those firms, over 15 of them are government-owned. Although this represent only minor portion, Estate SOE contribute an important impact in welfare development and provide employment in the regions. It generated nearly 231.819 jobs (1,96%) of total jobs and managed about 1.328.000 hectare (22%) of total land bank for plantation sector in 2010 (SOE, 2012). Moreover, they play a significant role in national economic and political stability by producing vital commodities for the country. Estate SOEs generated IDR 40.563 billions (USD 4.51 billions) of annual sales in 2010, which is 58% dominated by palm oil products and 21% by product of sugar cane. Figure 1 displays the sale of the commodity composition.

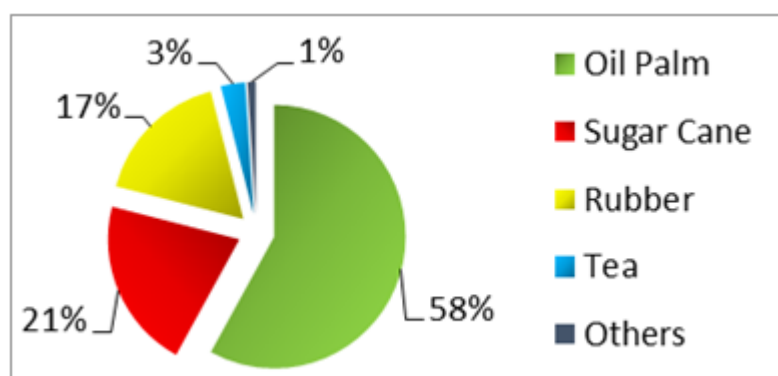


Figure-1. Sales Sharing by Types of Crops of Estate SOE in Republic of Indonesia  
Source: Estate financial statements for the year ended December 31, 2010

### 1.1. Problem with Accounting Method Regarding to the Economic Value Added Perspective

The usefulness of traditional accounting method in valuating business performance has been discussed for several decades. The most common problem is about whether reporting under accounting framework that truly reflect the link to the economic value and how they're going to be connected to the intangible investments to keep the business in the long term. Traditionally, the return of the capital employed in the company has sufficient performance for investors and executives. This argument ended up when a new understanding was proposed as well-established concept through Economic Value Added (EVA™) which consider not only capital return but also the cost must be covered after capital usage (Allen, 2000). In this term, a firm need to create a positive spread for collected investment and gain a return above the cost of capital (Pandey, 2005; Bardy and Massaro, 2012). In a simple sentence, a positive return alone is not enough to create shareholder value.

In addition, some of the intangible assets should be valued to enable the company to realize its true value. Accounting method led to the assessment report financial performance deviates from the real economic situation and consequently increase the usefulness of the information provided. When considering innovations such as value creation, as well as research and development, workforce training, acquisition of new technology, advertising, etc.,

are rarely recognized in the balance sheet. Under current Generally Accepted Accounting Principles (GAAP) much of those expenditure are immediately expensed, whereas those expenditure needed as foundation to build long-term shareholder value. Instead, EVA<sup>TM</sup> adjust accounting income equivalent to equity reserves added to the asset. And the same adjustments are made to LIFO reserve to inventory, and the cumulative amortization to goodwill, research and development expense as a long-term asset, and cumulative unusual losses (gains) after taxes are to a long-term investment (Huang and Wang, 2008; Tseng, 2008; Al Mamun *et al.*, 2012).

## 2. METHODOLOGY

### 2.1. Sample Selection

The population of Estate SOE in Indonesia was 15 firms during 2002-2011. As a sample it must have been verified according to the fiscal year which have the same period, legalized, provide both Financial Statements and Performance Evaluation Statements. In this study, the sample size has been reduced to 13 companies due to lack of data.

### 2.2. Research Variables

Financial Performance Valuation Method of Estate SOE of Indonesia is based on the Decree of State Owned Enterprise Minister Number: Kep-100/MBU/2002 about Valuation of State Owned Enterprises Performance (SOE, 2002). In this study the financial performance of Estate SOE (SOE, 2011) assessed annually based on 8 accounting metrics including Return on Equity (ROE), Return on Investment (ROI), Total Asset Turnover (TATO) as profitability indicators; Cash Ratio (CR), Current Ratio (CUR), Collection Period (CP), Inventory Turnover (ITO) as liquidity indicators, and Total Equity to Total Asset Ratio (TETA) as solvency indicator. These measurements are weighted and coupled into single metric namely Financial Health Score (FHS). This score translates financial performance in a shareholder view and motivates executives to find ways to increase efficiency and competitiveness. Performance evaluation method is attached in appendix 1.

**Economic Value Added (EVA<sup>TM</sup>)**, is the surplus which is generated from operating activities after making an appropriate charge for the capital employed (Rotinsulu, 2005). Simply, EVA<sup>TM</sup> is computed as follows:

$$EVA^{TM} = NOPAT - (TC * WACC)$$

Where; NOPAT is Net Operating Profit After Tax. TC is Total Capital Employed. WACC is Weighted Average Cost of Capital

In calculating NOPAT, the non-operating items do not consider. The total capital invested is the sum of shareholder funds as well as loan funds, but it does not include investments outside the business (Prober, 2000; Desai and Ferri, 2006; Stangeland, 2006; Sharma and Kumar, 2010). NOPAT and Total Capital are configured by adding back and/or eliminating several adjustments that are recommended including training expense, loss on foreign exchange, goodwill amortization, etc. The WACC is cost of debt ( $K_d$ ) is taken as after tax cost and cost of equity ( $K_e$ ) measured on the basis of bond-yield-plus-risk-premium (Baker and Powell, 2005). By treating the rate of Central Bank of Indonesia Certificate as government bond, WACC is calculated as follows:

$$WACC = \left[ \left( \frac{D}{D+E} \right) K_d \right] + \left[ \left( \frac{E}{D+E} \right) K_e \right]$$

Where; D is the book value of debts, E is the book value of equity,  $K_d$  is the cost of debts, T is the rate of tax, and  $K_e$  is the cost of equity.

**2.3. Model Specification**

Here, the Spearman and Pearson coefficient correlation was calculated to assess how well an arbitrary monotonic function can describe the relationship between EVA<sup>TM</sup> and some accounting metrics (Hauke and Kossowski, 2011). Seemingly Unrelated Regression (SUR) in the regression was utilized to accommodate heteroscedasticity problem as well as autocorrelation in the single equation (Greene, 2002). A dummy variable is also included for time variable to measure temporary effect. This variable is employed in order to control the effect of macro-economic on the shareholder value. Since ten year periods are used, only nine dummies a necessary to avoid the dummy variable trap (Gujarati, 2004). The equation is as follow:

$$EVA_{it} = (\lambda_0 + \lambda_1 Dum02 + \lambda_2 Dum03 + \dots + \lambda_9 Dum10) + \beta X_{it} + \varepsilon_{it} \dots\dots\dots (3.1)$$

for  $i = 1, 2, \dots, 13$  and  $t = 2002, 2003, \dots, 2011$

Where; EVA is dependent variable,  $i$  stands for the  $i$ -th cross sectional unit and  $t$  for the  $t$ -th time period. Dum is dummies of time variable, for example *Dummy02* takes a value of 1 for observation in year 2002 and 0 otherwise, etc.  $X$  is the independent variable ( $X$  will be replaced with ROE, ROI, TATO, CR, CUR, CP, ITO, TETA, or FHS),  $\lambda$  and  $\beta$  is coefficient,  $\varepsilon$  is the error term.

**2.4. Proposed Hypotheses**

In testing the panel regression model, hypotheses are developed. With 95% confidence level, for  $H_A: \beta \neq 0$  for  $A = 1, 2, 3, \dots$  and 9, we will test the hypotheses as follows:

- H1: There is a relationship between ROA and EVA<sup>TM</sup>.
- H2: There is a relationship between ROI and EVA<sup>TM</sup>.
- H3: There is a relationship between TATO to EVA<sup>TM</sup>.
- H4: There is a relationship between CR to EVA<sup>TM</sup>.
- H5: There is a relationship between CUR to EVA<sup>TM</sup>.
- H6: There is a relationship between CP to EVA<sup>TM</sup>.
- H7: There is a relationship between ITO to EVA<sup>TM</sup>.
- H8: There is a relationship between TETA to EVA<sup>TM</sup>.
- H9: There is a relationship between FHS to EVA<sup>TM</sup>.

**2.5. Seemingly Unrelated Regression (SUR) Method**

The seemingly unrelated regressions (SUR) model, proposed by Zellner, can be viewed as a special case of the regression model (Greene, 2002). The basic SUR model assumes that, for each individual observation  $i$ , there are  $M$  dependent variables  $y_{i1}, \dots, y_{ij}, \dots, y_{iM}$  available, each with its own linear regression model:

$$y_{ij} = x'_{ij} \beta_j + \varepsilon_{ij}, i = 1, \dots, N,$$

or, with the usual stacking of observations over  $i$ ,

$$y = X_j \beta_j + \varepsilon_j$$

for  $j = 1, \dots, M$ , where  $y_j$  and  $\varepsilon_j$  are  $N$ -vectors and  $X_j$  is an  $N \times K_j$  matrix, where  $K_j = \dim(\beta_j)$  is the number of regressors for the  $j^{\text{th}}$  regression.

**3. RESULTS AND DISCUSSION**

Economic value added, or EVA measurement is often used to prove value creation in a period of financial activities in a business or other organization. Altendorfer and Jodlbauer (2010) used work in process (WIP) and finished goods inventory (FIG) combine with utilization, service level and production lead time factor to measure EVA to calculate the company value. The finding showed that a higher average (machine) utilization as measured

from a ration of maximum possible personnel capacity divided by the average available (machine) capacity is optimal to maximize EVA. Meanwhile, Warr (2004) studied a distortions to EVA that potential to cause inefficiency in investment and compensation outcomes. The result taken by an empirical tests on a large sample of US firms indicate that inflation has a positive effect on real EVA and a negative effect on nominal EVA. This suggests a warning to be aware of the distortions that caused by inflation. Another study to EVA is approached by using the operational scale, prices and technology to show value added in forest industries by Lantz (2005). In his study, EVA is the decomposition into regression model with explanatory variables are used.

Here in this study, the EVA is measured using SUR. The results can be explained where for  $EVA^{TM} > 0$ , means that there is a value created both for the company and shareholder.  $EVA^{TM} = 0$  means that the companies just meet an income from debt and shareholder, and  $EVA^{TM} < 0$  indicates a loss.

Table 1 shows value creation progress for Estate SOE during 2002-2011. Period 0 represents the year of adopting accounting method. The value creation over the period +2 through +9 were captured. This evidence confirms that the value can be increased based on both the mean and median companies that drive financial performance in accordance with the accounting framework. Furthermore, the future value creation is expected to increase at a growth rate of 1.66 times per year. (See appendix 2 for the scoring list of the data used)

Table-1. Value Creation ( $EVA^{TM}$ ) for year 2002-2011 of Estate SOE of Indonesia

Year of Adopting Accounting Basis	Economic Value Added ( $EVA^{TM}$ )									
	0	+1	+2	+3	+4	+5	+6	+7	+8	+9
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Median (in billion IDR)	(34.24)	(13.67)	13.33	2.61	13.99	39.02	79.47	45.61	86.95	132.20
Mean (in billion IDR)	(37.38)	(8.91)	49.96	29.22	13.73	112.92	141.19	63.25	142.33	185.90
N (firms)	13	13	13	13	13	13	13	13	13	13

Source: SOE, 2012.

However, in this initial analysis, there was no clear relationship emerged. Therefore, it is necessary to perform correlation and regression test. The result presented in Table 2 shows the coefficient correlation among  $EVA^{TM}$ , accounting metrics, and financial health score. The correlation between  $EVA^{TM}$  with ROE, ROI, TATO, CR, CUR, TETA, and FHS are positive and significant at 99% confidence level. Otherwise, the correlation between  $EVA^{TM}$  with CP and ITO are negative and significant at 99% confidence level.

It is apparent that accounting metrics and financial health score have correlation with  $EVA^{TM}$ . In order to obtain robust conclusion, SUR model with time-series-fixed-effect is undertaken. For the model of  $\beta_{1t} = \lambda_0 + \lambda_1 \text{Dummy}02 + \lambda_2 \text{Dummy}03 + \dots + \lambda_9 \text{Dummy}10$ , the following regression models are:

Model 1:  $EVA_{it} = \beta_{1t} + \beta_2 \text{ROE}_{it} + \epsilon_{it}$

Model 6:  $EVA_{it} = \beta_{1t} + \beta_2 \text{CP}_{it} + \epsilon_{it}$

Model 2:  $EVA_{it} = \beta_{1t} + \beta_2 \text{ROI}_{it} + \epsilon_{it}$

Model 7:  $EVA_{it} = \beta_{1t} + \beta_2 \text{ITO}_{it} + \epsilon_{it}$

Model 3:  $EVA_{it} = \beta_{1t} + \beta_2 \text{TATO}_{it} + \epsilon_{it}$

Model 8:  $EVA_{it} = \beta_{1t} + \beta_2 \text{TETA}_{it} + \epsilon_{it}$

Model 4:  $EVA_{it} = \beta_{1t} + \beta_2 \text{CR}_{it} + \epsilon_{it}$

Model 9:  $EVA_{it} = \beta_{1t} + \beta_2 \text{FHS}_{it} + \epsilon_{it}$

Model 5:  $EVA_{it} = \beta_{1t} + \beta_2 \text{CUR}_{it} + \epsilon_{it}$

Table 3 shows the regression results, indicating that there is a positive relationship between ROE, ROI, TATO, CR, CUR, TETA and FHS to  $EVA^{TM}$  and a negative relationship between CP and ITO to  $EVA^{TM}$ . The results illustrate that coefficient are statistically significant at 1% level for all regression models. The determinant  $R^2$  also indicates that as profitability indicators, ROE (0,8001) is more associated with  $EVA^{TM}$  than ROI (0,7460) and TATO (0,6324). As the liquidity indicator, ITO (0,8552) is more associated with  $EVA^{TM}$  than CR (0,6641),

CUR (0,7173), and CP (0,4955). And as solvency indicators, TETA can explain 0,8821 of EVA<sup>TM</sup>; and the cumulative of financial performance score, FHS, can explain 0,8042 of EVA<sup>TM</sup>.

**Table-2.** Result of coefficient correlation of financial performance indicator and EVA<sup>TM</sup>

Variables		Correlation Coefficient				Hypotheses Alternative (HA)
1	2*	Correlation Type	Coefficient	Probability	N	
-- Profitability Indicator --						
EVA	ROE	Pearson (2-tailed)	0/241**	0/006	130	Accepted
EVA	ROI	Pearson (2-tailed)	0/381**	0/000	130	Accepted
EVA	TATO	Pearson (2-tailed)	0/294**	0/000	130	Accepted
-- Liquidity Indicator --						
EVA	CR	Pearson (2-tailed)	0/731**	0/000	130	Accepted
EVA	CUR	Pearson (2-tailed)	0/368**	0/000	130	Accepted
EVA	CP	Pearson (2-tailed)	(0/183)**	0/037	130	Accepted
EVA	ITO	Pearson (2-tailed)	(0/380)**	0/000	130	Accepted
-- Solvency Indicator --						
EVA	TETA	Pearson (2-tailed)	0/387**	0/001	130	Accepted
-- Cumulative Financial Performance --						
EVA	FHS	Spearman (2-tailed)	0/788**	0/000	130	Accepted

\* Return on Equity (ROE), Return on Investment (ROI), Total Asset Turnover (TATO); Cash Ratio (CR), Current Ratio (CUR), Collection Period (CP), Inventory Turnover (ITO), Total Equity to Total Asset Ratio (TETA) Financial Health Score (FHS).

\*\* Correlation is significant at the 99% confidence level

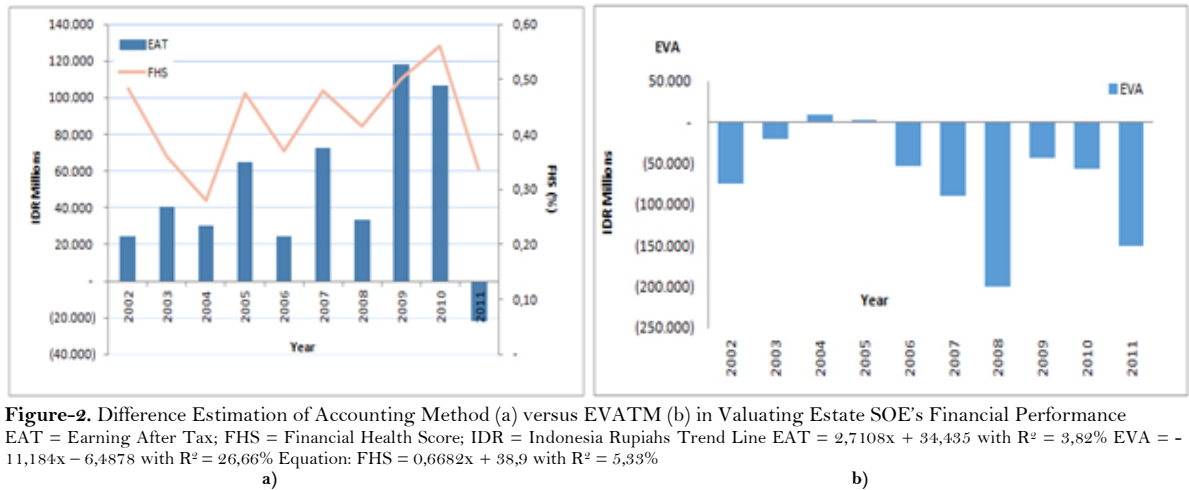
**Table-3.** Results of Regression Analysis from Accounting Metrics of Performance on Created Shareholder Value

Dependent (Y)	Independent (X)*	R <sup>2</sup>	Adjusted R <sup>2</sup>	F Statistic	t Statistic	β	Probability	Hypotheses Alternative (HA)
-- Profitability Indicator --								
EVA	ROE	0,8156	0,8001	52,64**	18,50**	5,26 x 10 <sup>10</sup>	0,0000	Accepted
EVA	ROI	0,7657	0,7460	38,89**	18,54**	3,69 x 10 <sup>11</sup>	0,0000	Accepted
EVA	TATO	0,6609	0,6324	23,19**	10,57**	1,22 x 10 <sup>11</sup>	0,0000	Accepted
-- Liquidity Indicator --								
EVA	CR	0,6901	0,6641	26,50**	12,53**	4,27 x 10 <sup>11</sup>	0,0000	Accepted
EVA	CUR	0,7392	0,7173	33,73**	17,18**	1,64 x 10 <sup>11</sup>	0,0000	Accepted
EVA	CP	0,5346	0,4955	13,67**	(7,98)**	(5,06 x 10 <sup>11</sup> )	0,0000	Accepted
EVA	ITO	0,8664	0,8552	77,20**	(27,70)**	(1,15 x 10 <sup>11</sup> )	0,0000	Accepted
-- Solvency Indicator --								
EVA	TETA	0,8821	0,8722	84,25**	28,32**	4,04 x 10 <sup>11</sup>	0,0000	Accepted
-- Cumulative Financial Performance --								
EVA	FHS	0,8042	0,7877	48,87**	20,62**	5,81 x 10 <sup>11</sup>	0,0000	Accepted

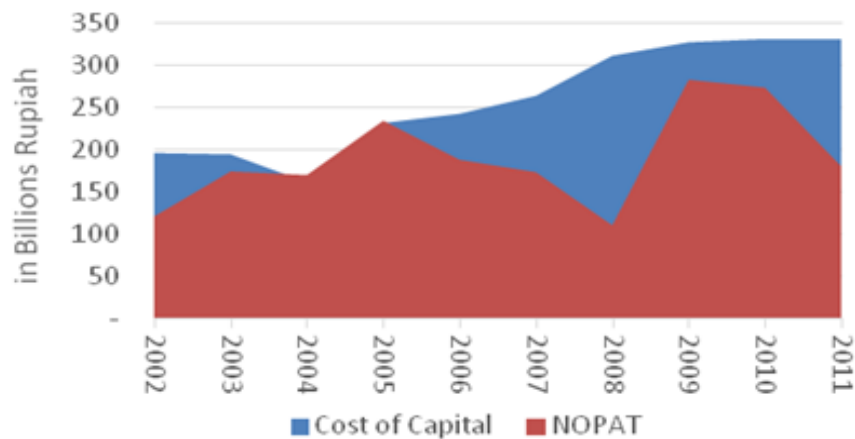
\* Return on Equity (ROE), Return on Investment (ROI), Total Asset Turnover (TATO); Cash Ratio (CR), Current Ratio (CUR), Collection Period (CP), Inventory Turnover (ITO), Total Equity to Total Asset Ratio (TETA) Financial Health Score (FHS).

Accounting method through FHS promotes Estate SOE favorable and promising as it is seen. But it can be argued that with the accounting method applied, it does not create the capital prices as what is needed to calculate and control cost of equity capital. In the value-based management, it is known that value will be added only after its earnings exceed overall capital charge. Although the ROE, computed as cost of debt capital demanded by debtholder (bank or other debt service provider), but without cost of equity from shareholder and either ROI or TATO, the amount of capital employed would has no charge. Whereas the cumulative score of ROE, ROI, and TATO performance influence 57% of FHS (40 points out of 70 points) for Estate SOE and 43% others are influenced by CR, CUR, CP, ITO, and TETA.

Next, regarding to Figure 2, it can be discussed that Financial Health Score, as cumulative score of financial performance indicators, has been inclining over the period of 2002-2011, as well as earning after tax is on average has a positive result (Figure 2a). However, EVA™ rather has this success as a creation. This proof is shown in Figure 2b where economic value added mostly has negative trend or declining since 2002. Over 8% of all firms suffered in this creation. However, this evidence discloses that accounting method adopters are possible to have situation where the financial performance looks healthier and books profit but the shareholder value creation is decreasing.



As seen in Figure 3, the uncontrollable cost of capital forced the companies spent high cost to generate Net Operating Profit after Tax (NOPAT) positive during 2002-2011 as a consequence of negative EVA. This situation leads to unexplainable the results of accounting performance valuation unless cost of capital is exactly known.



**Figure-2.** Results of Economic Value Added Analysis: Net Operating Profit after Tax Lower than It Overall Cost of Capital  
 Note: EVA = Net Operating Profit after Tax (NOPAT) – Cost of Invested Capital

#### 4. CONCLUSION

This study contributes to a significant relationship between Financial Performance and Financial Health of Indonesia Estate Crop in 2002-2011. EVA growth was 1.7 times per year in which EVA lowest occurred in 2002 and the highest achieved in 2011. The trend showed a profit of 8% looks better, but decreased in value creation. This means that although the accounting methods Estate SOEs financial performance look healthier and more profitable, but basically they suffered losses due to their shareholders' value as evidenced by the negative EVA™.



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## Appendices

Appendix-1. Calculation of Accounting Metrics and Financial Health Score

No	Financial Health Score Components	Calculation Stage	Max Score
1	Cash and Bank	Financial Statements	-
2	Deposit	Financial Statements	-
3	Cash and Cash Equivalent	(1 + 2)	-
4	Trade Receivable	Financial Statements	-
5	Inventory	Financial Statements	-
6	Current Assets	Financial Statements	-
7	Immature Plantation	Financial Statements	-
8	Construction in Progress	Financial Statements	-
9	Depreciation and Amortization	Financial Statements	-
10	Total Assets	Financial Statements	-
11	Current Liabilities	Financial Statements	-
12	Total Equity	Financial Statements	-
13	General Reserve	Financial Statements	-
14	Sales Revenue	Financial Statements	-
15	Non-Operating Income	Financial Statements	-
16	Total Revenue	(14 + 15 - 17)	-
17	Sales on Fixed Asset	Financial Statements	-
18	Interest Expense	Financial Statements	-
19	Gain (Loss) before Income Tax	Financial Statements	-
20	Gain (Loss) after Income Tax	Financial Statements	-
21	Equity Capital	(12 - 8 - 20)	-
22	Earnings Before Interest, Tax, Depreciation, and Amortization (EBITDA)	(9 + 18 + 19 - 17)	-
23	Capital Employed	(10 - 7 - 8)	-
24	Return on Equity (ROE)	(20 - 17) / 21 * 100%	20 points
25	Return on Investment (ROI)	22 / 23 * 100%	15 points
26	Cash Ratio (CR)	3 / 11 * 100%	5 points
27	Current Ratio (CUR)	6 / 11 * 100%	5 points
28	Collection Period (CP)	(4 / 14) * 365 days	5 points
29	Inventory Turn Over (ITO)	(5 / 14) * 365 days	5 points
30	Total Asset Turn Over (TATO)	16 / 23 * 100%	5 points
31	Total Equity to Total Assets (TETA)	(12 - 13) / (10 - 13) * 100%	10 points
Financial Health Score (FHS)		Maximum Score of 24 + 25 + 26 + 27 + 28 + 29 + 30 + 31	70 points

Appendix-2. Scoring list for the data used

ROE	Score	ROI	Score	CR	Score	CUR	Score	CP	Score
ROE > 15	20	ROI > 18	15	CR ≥ 35	5	CUR ≥ 125	5	CP ≤ 60	5
13 < ROE ≤ 15	18	15 < ROI ≤ 18	13,5	25 ≤ CR < 35	4	110 ≤ CUR < 125	4	60 < CP ≤ 90	4,5
11 < ROE ≤ 13	16	13 < ROI ≤ 15	12	15 ≤ CR < 25	3	100 ≤ CUR < 110	3	90 < CP ≤ 120	4
9 < ROE ≤ 11	14	12 < ROI ≤ 13	10,5	10 ≤ CR < 15	2	95 ≤ CUR < 100	2	120 < CP ≤ 150	3,5
7,9 < ROE ≤ 9	12	10,5 < ROI ≤ 12	9	5 ≤ CR < 10	1	90 ≤ CUR < 95	1	150 < CP ≤ 180	3
6,6 < ROE ≤ 7,9	10	9 < ROI ≤ 10,5	7,5	0 ≤ CR < 5	0	CUR < 90	0	180 < CP ≤ 210	2,4
5,3 < ROE ≤ 6,6	8,5	7 < ROI ≤ 9	6					210 < CP ≤ 240	1,8
4 < ROE ≤ 5,3	7	5 < ROI ≤ 7	5					240 < CP ≤ 270	1,2
2,5 < ROE ≤ 4	5,5	3 < ROI ≤ 5	4					270 < CP ≤ 300	0,6
1 < ROE ≤ 2,5	4	1 < ROI ≤ 3	3					CP > 300	0
0 < ROE ≤ 1	2	0 < ROI ≤ 1	2						
ROE ≤ 0	0	ROI ≤ 0	1						

ITO	Score	TATO	Score	TETA	Score
ITO ≤ 60	5	TATO > 120	5	TETA < 0	0
60 < ITO ≤ 90	4,5	105 < TATO ≤ 120	4,5	0 ≤ TETA < 10	4
90 < ITO ≤ 120	4	90 < TATO ≤ 105	4	10 ≤ TETA < 20	6
120 < ITO ≤ 150	3,5	75 < TATO ≤ 90	3,5	20 ≤ TETA < 30	7,25
150 < ITO ≤ 180	3	60 < TATO ≤ 75	3	30 ≤ TETA < 40	10
180 < ITO ≤ 210	2,4	40 < TATO ≤ 60	2,5	40 ≤ TETA < 50	9
210 < ITO ≤ 240	1,8	20 < TATO ≤ 40	2	50 ≤ TETA < 60	8,5
240 < ITO ≤ 270	1,2	TATO ≤ 20	1,5	60 ≤ TETA < 70	8
270 < ITO ≤ 300	0,6			70 ≤ TETA < 80	7,5
ITO > 300	0			80 ≤ TETA < 90	7
				90 ≤ TETA < 100	6,5

Note: ROE = Return on Equity CR = Cash Ratio CP = Collection Period TATO = Total Assets Turnover

ROI = Return on Investment CUR = Current Ratio ITO = Inventory Turnover TETA = Total Equity to Total Assets

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