THE RELATIONSHIP BETWEEN ECONOMIC VALUE ADDED, MARKET VALUE ADDED AND RETURN ON COST OF CAPITAL IN MEASURING CORPORATE PERFORMANCE

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Abstract: The aim of the paper is to assess the relationship between Economic Value Added (EVA), Market Value Added (MVA) and the traditional financial ratio in measuring investment performance by a holding company. The sample is PT. Astra International, Tbk in Indonesia. Astra is one of the largest conglomerate in Indonesia with diversify business from automotive, financial service, agro, infrastructure and technology. All of the investments are consolidated under single company, which is PT. Astra International, Tbk. The research assessed the financial performance from 2009 – 2016. The research will use Economic Value Added (EVA), Market Value Added (MVA) and Return on Weighted Average Cost of Capital (ROC) as financial measurement tools. The research found that there was a direct relationship between ROC and EVA. Negative EVA and negative ROC did not reflect the MVA on company performance. Negative EVA and ROC, could have positive Market Value Added (MVA). However negative MVA value will also reflect on negative EVA and ROC.

Keywords: Corporate Performance, EVA, MVA

ABSTRACK: Tujuan dari penelitian ini adalah untuk mengetahui hubungan antara Economic Value Added (EVA), Market Value Added (MVA) and Return on Weighted Average Cost of Capital (ROC) dalam mengukur kinerja investasi oleh perusahaan induk. Sampel yang dipergunakan adalah PT. Astra International, tbk. Astra merupakan konglomerat di Indonesia dengan aneka bisnis dari otomotif, keuangan, agro, infrastruktur dan teknologi. Semua investasi ini dikonsolidasikan dalam 1 perusahaan induk yang dikenal PT. Astra International, Tbk. Penelitian ini mempergunakan data keuangan dari tahun 2009-2016. Penelitian mempergunakan *Economic Value Added (EVA), Market Value Added (MVA)* dan Return on Weighted Average Cost of Capital (ROC) sebagai ukuran kinerja keuangan. Penelitian ini menemukan bahwa terdapat hubungan langsung antara ROC dengan EVA. EVA dan ROC yang negatif tidak memiliki hubungan langsung dengan Market Value Added (MVA). Akan tetapi, nilai MVA yang negatif dicerminkan juga EVA dan ROC yang negatif.

Kata Kunci: Kinerja Perusahaan, EVA, MVA

INTRODUCTION

The increasing of company's performance through acquisitions or investments in another company has become an alternative of growth in the current business development. The parent company will choose another company to be invested to produce more value than it can generate. By generating more returns, the value of the parent company will have a higher return than stand alone.

In addition to expecting a higher value, the return must also be higher than the cost of capital invested. The invested capital is derived from internal capital or debt from third party.

In calculating this investment, the company will calculate the cost of capital imposed by the interest on the loan and the expected return on equity.

Cost of Debt is the interest charged by the creditor or bank to the investment company. The interest cost of this loan should be in the long-term loan interest rate. Investing is a long-term decision, not a short-term one. Cost of Equity is used when there is expected return desired by investors or the shareholders to the investment companies. This expected return could be derived from the comparison of similar company in the identical industry or risks that emerge from the investment.

The Company will earn a positive margin if the return of a subsidiary is greater than the weighted average cost of capital (WACC). It reflects that the return on investment is greater than the cost of capital.

There was a relationships between EVA and MVA with reported earnings, and the highest correlation among the models is relationship within the same year period, which can be used for evaluation purposes. MVA is more significant in explaining its relationship with reported earnings rather than EVA. (Wibowo and Berasategui, 2008)

There are stronger relationships between MVA and cash flow from operations. It was found that there were very little correlation between MVA and EPS, or between MVA and DPS, concluding that the credibility of share valuations based on earnings or dividends must be questioned. (Wet, 2005)

Sharma and Kumar (2010) presented a narrative literature review of 112 papers published on the EVA from 1994 to 2008. The studies conducted in the developed countries have largely been found to be supporting EVA though there are certain studies in these countries too that consider conventional measures as better tools of corporate performance reporting. The paper presents a comprehensive literature review and a critical analysis to move towards the advances in EVA. It may be a very useful source of information to the researchers and managers who wish to understand and implement EVA and carry out further research on the diverse issues of this interesting and value adding performance metric.

Other than the comparison of return on equity versus WACC, there are also companies that using Economic Value Added (EVA) to measure performance generated by the subsidiaries. Another alternative to measure the financial performance, there are companies that use Market Value Added (MVA). It compares the value of the stock price with the total book value of equity in the company. If the MVA is greater than the total book value of equity, then the value of the firm is considered positive and if the MVA is smaller than the total book value of equity, then the value of the firm is considered negative value.

Few researches have focused on economic value added and market value added. Among some examples are Turvey et. all (1998), Trotella and Brusco (2000), Kramer and Peters (2001), Huang and Wang (2008), Widyatmini and Damanik (2009), Knapová (2011), Salehi and Ghorbani (2011), AlOmoush and AL-Shubiri (2013), Hundal (2015), and Ramadan (2016).

Turvey et. all (1998) has found that EVA have proponents and opponents. The study's aim to objectively assess the claims of the value of EVA as a stock performance predictor for a small group of Canadian food companies. It cannot be concluded that EVA provides a superior stock performance metric, or is correlated with increased share values.

Trotella and Brusco (2000) analyze the effects over the main company variables, looking at the evolution before and after EVA® adoption of three sets of company variables: profitability, investment and cash flow variables. The research observe that the EVA® introduction does not generate significant abnormal returns, either positive or negative. In other words, the market does not appear to react to EVA® adoption. The analysis shows that firms adopt EVA® after a long period of bad performance, and performance indicators improve only in the long run after EVA® adoption. The research observed that the EVA®

adoption affects positively and significantly cash flow measures. The research test if this positive relation between EVA® adoption and cash flow measures can be due to the fact that such measures affect directly part of managerial compensation, but the research does not obtain definitive robust results.

Abdeen and Haight (2000) focused on the uses, benefits and limitations of economic value added (EVA) as a value creation measure. It shows that users performance means profits as percentage of revenues, assets, and stockholders' equity were higher than the means of non-users. The conclusion of this research is not in support of EVA use as a measure of value creation to stockholders.

Kramer and Peters (2001) did an empirically tests the relation between capital intensity and EVA's ability to serve as an effective proxy of market value added. The research found that Eva is no less "at home" in the information economy than it is in tradisional manufacturing businesses. The results do indicate that in most of the industries studied, the marginal costs of using EVA as a proxy for market value added are not justified by any marginal benefits.

Petravičius T. and Tamošiūnienė R. (2008) look at the four most widely used value enhancement measures including Economic Value Added, Cash Flow Return on Investment, Market Value Added, Cash Value Added and use an example to think of where these approaches yield similar results and where di erences might occur. They summarized the new or unique points in these competing measures, establish the information they can give and explain how to use it when managing and creating shareholder value.

Huang and Wang (2008) extended Ohlson' s model by adopting Economic Value Added (EVA) for excess earning abilities and adding intellectual capital for rms listed on Taiwan Stock Exchange. The research sample comprised 14 rms in traditional industries (42 observations) and 23 rms in the electronic industry (67 observations), with a total of 37 rms (109 observations). The research results show residual income based on EVA is no better than that based on current GAAP in its capacity to explain variations in a rm's market value.

Widyatmini and Damanik (2009) did a research, which shows that all independent variables proposed (economics value added, current ratio, quick ratio, total asset turnover ratio, inventory turnover ratio, gross profit margin ratio, net profit margin ratio, return on asset ratio, return on equity ratio, debt ratio, debt equity ratio, leverage ratio, earning per share, and price earning ratio) influence stock price. But partially, only net profit margin ratio and earning per share influence stock price significantly.

Trisnawati (2009) conducted a research to analyze the influence of Economic value added, cash flow from operations, residual income, earnings, operating leverage and Market value added to the stockholders' return. The empiric result indicates that all of the independent variables (Economic value added, cash flow from operations, residual income, earnings, operating leverage and Market value added) do not have significant influence to the return on shares.

Shil (2009), In this research, an earnest effort has been made to explain theoretical foundation of EVA with its origination, definition, ways to make it tailored, adjustments required, scope and some other related issues. The methodology used is a type of theoretical mining of logics resulting a step-by-step process required for EVA implementation. As corporate house plans to move from traditional to value based performance measures, EVA would yield good result and the paper may become helpful to them to comprehend the methodology.

Knapová (2011) stated that Economic Value Added should serve as one of criteria of investment decision and as criterion of the appraisal of managerial decision making, because just managers are responsible for the economical process and results of the main operating activities.

Salehi and Ghorbani (2011) do a reseach to know how much financial and non-financial criteria are used to evaluate the efficiency. The results of T-test, independence sample, multi variable single variance analysis test and Tokay test, the following show that. First the efficiency evaluators are mostly interested in using financial criteria rather than non-financial once; and second using non-financial criteria, there was significant difference between those evaluators who were familiar with BSC and the others.

Ismail (2011) found that neither value creator nor value destroyer had a relationship with stock return, as both models prove to be statistically insignificant. This finding is contrary to findings by Turvey et al. (2000). The value creators had a better relationship with earnings than value destroyers and this study indicates that, value creators have better earnings multiplier than value destroyers. It also indicates that, EVA had a better relationship with stock return over a longer period of the study.

Abdoli et all (2012) researched the relationship between each independent variable including economic value added and residual income as the representatives of economic models with the created shareholders value is studied. The studied statistical population consists of all the companies listed in Tehran Stock Exchange during 2006-2009, except for investment and holding companies. The results indicate that both economic value added and residual income have significant relationship with the shareholders' created wealth.

Wet (2012) test the relationship between executive remuneration of South African listed companies and EVA and MVA, as well as traditional performance measures such as return on assets (ROA) and return on equity (ROE). The findings indicate that there is indeed a significant relationship between executive remuneration and EVA and MVA, but that the correlation is better between executive remuneration and ROA and ROE. It is concluded that South African companies need to shift the emphasis away from traditional performance measures to value-creation measures when designing and implementing executive compensation plans.

Patel and Patel (2012) determined shareholders value (in terms of economic value added) of selected private sector banks during the last five years. Hypotheses were developed to test significant impact of EVA on stock price of bank & that hypothesis was tested by using ANOVAs. For none of the bank EVA has Impact on share price, except EVA by Kotak Mahindra bank did have significant impact on stock price of Kotak Mahindra bank

Sharma and Kumar (2012) examine whether Economic Value Added (EVA) can be used as a tool of performance measures while investing in Indian market and provide evidence about its superiority as a financial performance measure as compared to conventional performance measures in Indian companies. The results of study revels that investor should use EVA alongwith traditional measures in firm valuation and making investment strategy.

Dunbar (2013) conducted on the EBSCO Host, ProQuest, and Googel Scholar databases to identify papers that had examined or otherwise incorporated the model in the research. This analysis provides insights into the delineation between the uses and applications that have arisen in the literature and in that respect provides support for future research into the EVATM model.

AlOmoush and AL-Shubiri (2013) examine the impact of multiple approaches financial performance indicators on stocks on firms' financial performance in Jordan. The research of this study has been conducted from 54 industrial firms. The study founds that there is a direct positive statistical indication impact from the profitability - measured either by return on equity (ROE) or Return on assets (ROA)- and stock returns except the year 2006 , and not statistical indication impact from the cash flows of the company and stock prices, finally the study found a positive statistical indication impact from the modern measures (EVA, MVA) and stock prices in different years.

Nakhaei and Hamid (2013) examined the relationship between economic value added (EVA), return on assets (ROA), and return on equity (ROE) with market value added (MVA) in Tehran Stock Exchange (TSE). The sample involves 87 non-financial companies listed in Tehran Stock Exchange (TSE) over the period 2004–2008. Pearson correlation coefficient and regression method was employed to analysis the scondary data. The results indicated there are meaningful correlation between EVA, and ROE with MVA, but there is not meaningful association between ROA and MVA.

Niresh and Alfred (2014) used correlation and regression methods to find out in what way financial managers can practice the effects of leverage and EVA to maximize MVA. There is no indicative association between EVA and MVA and leverage and MVA, the findings reveal. Furthermore, the results showed that both EVA as well as leverage have no profound impact on Market Value Added of the selected listed private banks in Sri Lanka.

Hundal (2015) highlights that the EVA, one amongst various 'Value Based Management' (VBM) measures, enables managers, investors, and analysts to adopt futuristic approach, make comprehensive assessment of their firms, and take objective decisions. The essence of the EVA is that true profit does not arise merely by paying debt cost to firms' debtholders but only when shareholders are also rewarded with a fair return on their investment. The EVA raises the bar of corporate performance, which adds value to the firm, and determines performance based executive pay; consequently, mitigating agency costs.

Ramadan (2016) aimed at examining the effect of macroeconomic variables on the performance of Jordanian manufacturing companies listed in Amman Stock Exchange expressed by EVA using unbalanced panel data pooled ordinary least square (OLS) regression model of all 77th Jordanian manufacturing companies listed at ASE for the period 2000-2014 resulting in 1085 firm-year observations connecting firm level and time series data set. The research conclude that Economic Value Add (EVA) of the Jordanian manufacturing companies, as a proxy of the performance, is a function of Inflation, Interest rate, Government expenditure ratio and Gross domestic product.

This research will examine the relationship of economic value added (EVA), market value added (MVA) and return on weighted average cost of capital (ROC). This research is examining EVA on each subsidiary of PT. Astra International investment and comparing both EVA, MVA and ROC on each subsidiary. This research also will be structured as follows, after the introduction, followed by the framework, methodology, variables and data in Section 2, and followed by the discussion in Section 3, and Section 4 will provide conclusions.

RESEARCH FRAMEWORK

The research framework is illustrated in Figure 1 below. This study examines the investment returns on the parent company by comparing the performance of the subsidiary compared to the cost of capital of the parent company.
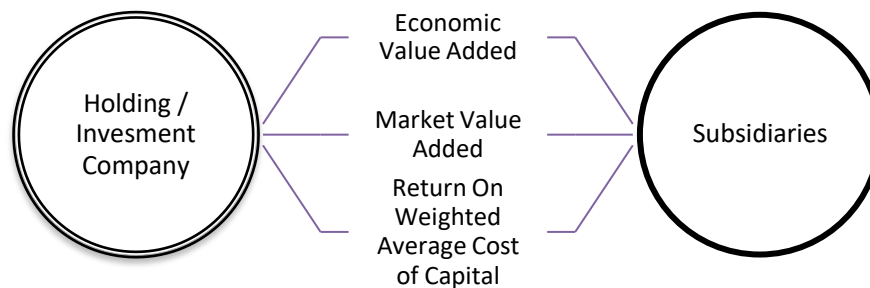
Figure 1. Research Framework

Source : (Research Result)

METHODOLOGY

This research is conducted by using Economic Valued Added (EVA) model, Market Value Added (MVA) and Return on Weighted Average Cost of Capital (ROC) in measuring the company performance. EVA calculates the required capital value (WACC) multiplied by the portion of the invested capital compared to the net profit value multiplied by the percentage of the ownership portion.

Market Value Added (MVA) compares the value of the stock price in the market with the firm's invested capital (Steward, 1990 in Shil, 2009).

$$MVA = (Market\ Value\ of\ the\ Company - Capital\ Invested)$$

$$MVA = Market\ Value\ of\ Equity - Book\ Value\ of\ Equity$$

$$MVA = (Market\ Value - Book\ Value\ )\ x\ No.of\ Shares\ oustadning\ )$$

Note :
Book Value of Equity = Capital Invested

Economic Value Added compares the value of investment costs with the investment returns (Stewart, 1990 in Shil, 2009)

$$EVA = NOPAT - Capital\ Costs$$

$$EVA = NOP\ (1 - tax) - Capital\ Employed\ x\ Cost\ of\ Capital$$

$$EVA = Return - Capital\ Employed\ x\ Weighted\ Average\ Cost\ of\ Capital$$

WACC (Weighted Average Cost of Capital) is a calculation of the cost of capital invested by taking into account the composition of equity capital costs and borrowing costs.

$$WACC = CoD\ x\ \frac{Debt}{(Debt + Equity)}\ x\ (1 - tax) + CoE\ x\ \frac{Equity}{Debt + Equity}$$

Explanation:
CoD   = cost of debt
CoE   = cost of equity
Tax   = tax

Definition of Cost of Debt

$$CoD = \frac{Interest\ Expense}{Average\ Bank\ Loan\ Outstanding}$$

Definition of Cost of Equity

$$CoE = \frac{Net\ Profit}{Average\ Equity}$$

Return on Weighted Average Cost of Capital (ROC) compares the return on equity (ROE) of a subsidiary with weighted average cost of capital (WACC).

$$ROC = \left(\frac{X_t}{Y_t}\right) - (WACC_t)$$

Note :
X   = Net profit after tax
Y   = book value of equity
WACC   = weighted average cost of capital

DATA

The research object used in this research are 3 methods of investment value calculation by Astra to its subsidiaries from 2009-2016.

DISCUSSION

PT. Astra International (Astra) is a holding company and that has more than 100 subsidiaries engaged in various industries as stated in Astra Annual Report 2016. Astra owns several subsidiaries which have become public listed companies with shares listed on the Indonesia Stock Exchange and there are several subsidiaries which have also issued bonds that recorded in the Indonesian capital market.

Over the past 8 years Astra has an average cost of debt of 12.08%. Cost of Debt is a loan interest rate on minimum credit for 3-year tenor of the loan. Cost of Debt ranges is 10% to 13.50%. The trend from year to year is declining. The value of loans / debt is growing from Rp. 21 trillion to 70.9 trillion in 2016.

Cost of Equity is the result of profit after tax compared to total equity than Astra. The CoE has an average of 22.51% with the highest trend that reach 28.97% in 2010 and the lowest of 12.34% in 2015. Astra consistently distributes dividends from year to year. Astra has equity growth of Rp. 90 trillion for the past 8 years.

The average WACC Astra reached 17.43%, by comparing the CoD and CoE composition from 2009-2016. The composition of equity to total capital is ranging from 61% to 69%. WACC reached 11.15% in 2016.

Earning after Tax of Astra group is around Rp. 12 Trilliun (2009) and highest is Rp. 22.7 Trillin (2012). For the past 8 years, Astra earned Rp. 17 trillion / year. For the capital, it grew from Rp. 48 trillion in 2009 to Rp. 139 trillion in 2016.

Tabel 1. Financial Performance of Astra as Holding Company

	Average	**Minimun**	**Maximun**	**Count**
Loan	47,494	21,921	70,910	8
Equity (In Billion Rupiah)	83,867	48,932	139,906	8
Equity / (Loan + Equity)	63.84%	61.28%	69.06%	8
Cost of Debt	12.08%	10.00%	13.50%	8
Cost of Equity	22.51%	12.34%	28.97%	8
WACC	17.43%	10.55%	22.12%	8
Earning After Tax (in billion Rupiah)	17,088	12,444	22,742	8

Source : Research

In this research, we will focus on measuring the performance Astra investment in its open-ended subsidiaries that offering bonds through the capital market. Performance Measurement is using the data for the last 8 years by calculating the average value and total value. The names of the listed subsidiaries are listed in Table 2.

Tabel 2. Astra's Subsidiaries

No.	Company Name	Astra's Ownership	Industry	Listed
1.	PT. United Tractors, Tbk	59,50%	Mining	Stock
2.	PT. Bank Permata, Tbk	44,56%	Banking	Stock
3.	PT. Astra Agro Lestari, Tbk	79,68%	Agri	Stock
4.	PT. Astra Auto Part, Tbk	80,00%	Automotive	Stock
5.	PT. Astra Graphia, Tbk	76,87%	Technology	Stock
6.	PT. Astra Sedaya Finance	86,14%	Financial Services	Bond
7.	PT. Federal International Finance	100,00%	Financial Services	Bond

Source : Annual Report

Return on Equity on average for 8 years of Astra's subsidiaries generates 18.82%. Federal International Finance (FIF) generates the highest average of 30.76% and Bank Permata has the lowest average ROE of 4.82%. The lowest average of 9.50% in 2016. The highest average reached 25.17% in 2010.

The highest ROE was achieved by FIF of 36.43% in 2016 and the lowest ROE achieved by Bank Permata by -33.79% in 2016. Astra Auto Part generates a declining ROE from 2010 to 2016. United Tractors, Astra Agro Lestari and Astra Auto Part generate ROE below 10% in 2015.

Based on the method of ROE with WACC difference, then during the year 2009-2016, Astra still has a positive average value of 1.39%. With the highest score reached in 2014 at 4.92% and the lowest score reached in 2016 at -1.66%.

EVA value on average for 8 years reached Rp. -960 Billion, where the largest average of EVA negative value is Rp. -1.8 trillion and the largest average of EVA positive value is

Rp. 647 Billion for 8 years 2009-2016. The biggest EVA negative value in 2016 was reached Rp. 7.31 trillion with the biggest negative contribution from Bank Permata. The highest positive value of EVA achieved in 2009 is Rp. 1.16 Trillion. From 7 subsidiaries, there are only 2 companies that consistently have positive values of EVA for 8 years—Federal International Finance and Astra Graphia. The biggest EVA for 8 years that FIF ever achieved is Rp. 1.25 trillion.

Tabel 3. Return on Equity Astra Group

ROE	Average	Minimun	Maximun	Count
United Tractor	15.89%	8.73%	27.36%	8
Bank Permata	4.82%	-33.79%	12.65%	8
Astra Agro Lestari	20.39%	5.89%	29.65%	8
Astra Auto Part	13.47%	3.14%	27.81%	8
Astra Graphia	25.63%	17.05%	28.63%	8
Astra Sedaya Finance	20.77%	12.26%	24.30%	8
Federal International Finance	30.76%	26.32%	36.85%	8
Average ROE	18.82%	9.50%	25.17%	8

Source : Research

On average, there are 4 subsidiaries that have positive value of EVA which are Astra Agro Lestari, Astra Graphia, Astra Sedaya Finance and Federal International Finance. There are 3 subsidiaries that have negative averages such as United Tractors, Bank Permata and Astra Auto Part. The highest average value of EVA is generated by FIF that reach Rp. 647 Billion

Tabel 4. EVA Astra Group

EVA	Average	Minimun	Maximun	Count
United Tractor	-169	-765	959	8
Bank Permata	-1,805	-8,669	-89	8
Astra Agro Lestari	391 -	544	902	8
Astra Auto Part	-333	-757	233	8
Astra Graphia	84 -	14	149	8
Astra Sedaya Finance	224	-29	636	8
Federal International Finance	647	216	1,252	8
Total EVA	-960	-7,311	1,161	8

Source : Research

Bank Permata has negative value of EVA during 2009-2016. The lowest negative value of EVA was achieved in 2016 is Rp. 8.7 trillion and the best negative value of EVA was achieved in 2015 which Rp. -89 Billion. On average the value of EVA Bank Permata reached 1.81 trillion.

Other than Bank Permata, Astra Auto Part also has a negative EVA value for the last 4 years and increased Rp. 532 billion in 2013 and reached up to Rp. 757 Billion.

Market Value Added measures the difference between the stock price in the market and the book value of the firm. The stock price used here is the price at the end of the closing year as used in the book value at the close book on December 31. This assessment is only done to the subsidiaries of Astra who have recorded their stock in the capital market

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Tabel 5. MVA Astra Group

MVA	Average	Minimun	Maximun	Count
United Tractor	43,171	25,305	70,783	8
Bank Permata	-629	-7,583	5,310	8
Astra Agro Lestari	25,606	12,758	37,492	8
Astra Auto Part	4,512	-2,433	10,098	8
Astra Graphia	1,220	79	1,653	8
Total MVA	73,880	36,290	110,970	8

Source : Research

The average MVA of Astra Group for 8 years is Rp. 73.88 Trillion with a minimum of Rp. 36.29 billion in 2015 and the highest reached Rp. 110,97 Trillion in 2010. Astra has an MVA value of Rp. 44.89 trillion in 2016. The value of MVA in total decreased from 2010 to 2016.

Astra Graphia has the lowest MVA value of Rp. 1.65 Trillion and United Tractors have the highest MVA value of Rp. 70.8 trillion. Astra Auto Part and Bank Permata have negative MVA value in 2016. This negative value has been experienced since 2015. Previously, Astra Auto Part also experienced negative MVA in 2011 and Bank Permata in 2013. Bank Permata on average has negative value MVA for 8 years which is Rp. -0.7 trillion.

Overall, Astra has a positive MVA score on average during 2009-2016 and earn return on equity of subsidiaries exceeding Astra's weighted average cost of capital. However, Astra has a negative value of EVA with the largest EVA contribution from Bank Permata.

Table 6. Summary of Research

No.	Company	ROE > WACC	EVA	MVA
1.	Investment Performance (Total)	+	-	+
2.	PT. United Tractors, Tbk	-	-	+
3	PT. Bank Permata, Tbk	-	-	-
4.	PT. Astra Agro Lestari, Tbk	+	+	+
5.	PT. Astra Auto Part, Tbk	-	-	+
6.	PT. Astra Graphia, Tbk	+	+	+
7.	PT. Astra Sedaya Finance	+	+	Not Available
8.	PT. Federal International Finance	+	+	Not Available

Source : Research

Astra Agro Lestari and Astra Graphia have a good and consistent of Astra investment performance in all three measurements. Astra Sedaya Finance and Federal International Finance have a positive performance for EVA and ROE measurement compared to WACC.

United Tractors and Astra Auto Part have a positive MVA score, indicating that the stock market of these two companies will have better value in the future. This also happens to all open subsidiaries except Permata Bank.

Bank Permata has an EVA, MVA and ROE that have smaller value compared to Astra's weighted average cost of capital. Hence, it can be concluded that investment in Bank Permata burden the investment performance of Astra.

Positive EVA values occur in Astra Agros Lestari, Astra Graphia, Astra Sedaya Finance and Federal International Finance. United Tractors, Astra Auto Parts and Bank Permata have negative EVA values. EVA performance is also reflected in the measurement of ROE compared with WACC.

EVA measurement is concluded to have a consistent measurement with the comparison of subsidiary's ROE with parent company's WACC.

Tabel 7. Summary of WACC, ROE, EVA, MVA

Summary	Average	Minimun	Maximun	Count
WACC PT. Astra International	17.43%	10.55%	22.12%	8
Average ROE (All Subsidiaries)	18.82%	9.50%	25.17%	8
Average ROE - WACC	1.39%	-1.66%	4.92%	8
Net After EVA (All Subsidiaries)	-960	-7,311	1,161	8
Net MVA (Listed Subsidiaries)	73,880	36,290	110,970	8

CONCLUSIONS

This study concludes that measurement of EVA has been consistent with the ratio of Return on Equity (ROE) with Weighted Average Cost of Capital (WACC) of the parent company. The negative EVA value and the difference between ROE and negative WACC are not always reflected by the negative MVA. The market has its own view of the value of a company based on its prospects than EVA.

A negative MVA score will be followed by a negative EVA assessment and also a negative ROE-WACC difference, but occur not in vice versa. There is no consistency in the same industry in EVA, MVA and ROE with WACC measurement.

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