

Full Length Research Paper

The ability of EVA (Economic Value Added) attributes in predicting company performance

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In this study the major question is, can positive EVA (economic value added) outperform negative EVA in predicting company performance and either the period of study may play a vital role in explaining the variation of the stock return. The study 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.

Key words: Attributes of EVA, positive EVA, negative EVA, company performance and stock return.

INTRODUCTION

Based on the study conducted by O'Byrne (1997), they addressed at least one traditional tool that is able to explain market return (company performance). However, many researchers had tried to identify the best tool to adopt in explaining company performance or stock return. Many found that EVA (economic value added) exhibited superior influence over a firm's market values (company performance) as compared to the traditional accounting measures (Isa and Lo, 2001; Lehn and Makhija, 1996). EVA is an estimate of a firm's economic profit -being the value created in excess of the required return of the company's shareholders - where EVA is the profit earned by the firm less the cost of financing the firm's capital. The idea is that, shareholders gain when the return from the capital employed is greater than the cost of that capital (Wikipedia, 2011).

In this study, the major question is whether positive EVA can outperform negative EVA in predicting company performance. Many believed that only positive EVA (value creator) companies are able to track stock return and accounting performance better than negative EVA (value destroyer). Will the same condition apply to this study? We also believe that the period of study may play a vital role in explaining the variation of the stock return. Some studies had agreed that longer periods tend to produce better results while the others do not support such findings. Thus, the findings will produce a new

dimension of knowledge to the market. The research question of the study is, can positive EVA explain company performance better? Can EVA explain company performance better over a longer period of study, and covering a larger sample in this study?

The relationship between EVA with company performance

Lehn and Makhija (1996) have studied EVA™ and MVA as performance measures and signals for strategic change. They found that both measures correlate positively with stock returns with traditional performance measures like return on assets (ROA), return on equity (ROE) and return on sales (ROS). They concluded that EVA™ and MVA were effective performance measures that contain information about the quality of strategic decisions and serve as signals of strategic change. Further, Uyemura et al. (1996) presented findings on the relationship between EVA™ and MVA covering 100 banks. Regressions of 5 performance measures were calculated, which includes EPS, net Income, ROE, ROA and EVA™. According to their study, the correlations between these performance measures and MVA are: EVA™ 0.4, ROA 0.13, ROE 0.1, net income 0.08 and EPS 0.06.

In addition, Milunovich and Tsuei (1996) had reviewed correlations between MVA and several conventional performance measures in the computer industry. They had found that EVATM correlates somewhat better with MVA than the other measures. R² for EVATM is 0.42, for EPS growth 0.34 and for ROE and EPS 0.29. In turn, Herzberg (1998) concluded that, the residual income valuation model (including EVATM) appears to have been very effective in uncovering firms whose stock is under priced when considered in conjunction with expectations for strong earnings and growth. Meanwhile, Isa and Lo (2001) found that, EVATM exhibited superior influence over a firm's market values added (MVA) as compared to the traditional accounting measures that is EPS. They compared EVATM and EPS in predicting MVA. They conducted a study on 100 of the largest non-financial companies listed on the Bursa Malaysia and it was aimed at examining the nature and characteristics of EVATM in large Malaysian companies listed on the local stock exchange. They found a strong positive relation between EVATM and MVA for value creators (companies with positive EVA values), while the relationship for value destroyers (companies with negative EVA values) were inconsistent. This study supports the fact that, the EVATM qualifies to be adopted as a corporate performance and valuation measure in Malaysia. The results are consistent with the contention that EVATM drives firm values.

Biddle et al. (1997) made comparisons between EVATM, Earning before Extraordinary Income (EBEI) and Cash Flow Operation (CFO) to determine which performance measures have greater association with stock returns. They found that EVA showed association to stock returns. Turvey et al. (2000) attempted to determine whether EVATM or other conventional measures such as Return on Asset (ROA), Return on Equity (ROE) and Return on Sale (ROS) to have a superior metric of evaluating firm performance. The regression results indicate in all cases, a general positive correspondence between EVATM/share and the financial performance metrics.

The relationship between positive and negative EVA with stock return

Positive EVA means the company is experiencing an excess of dollar amount of net operating profit after tax (NOPAT) after deducting the dollar charge for capital (both debt and equity) which is obtained by multiplying the percentage of weighted average cost of capital (WACC). It means the company had excess real profit, that the company gained after deducting cost of investment by investors from net profit. It is the norm nowadays for companies to only declare profit that, while not taking into account of the cost of capital or investment. In contrast, for value destroyer companies (negative EVA) the net profit is not enough to cover the

cost of investment by investors. The negative EVA means that a company is running in losses, after deducting the cost of capital.

Based on the aforesaid findings, most researchers have agreed that value creator companies are able to explain the links to variations of stock returns well, compared to value destroyer companies. The fourth hypothesis will recognize that, the same situation applies to Malaysian companies. Isa and Lo (2001) had identified positive EVATM as wealth creators and negative EVATM as wealth destroyers. They had conducted a study on this two EVATM samples, in identifying whether these samples behave differently in terms of the explanatory power of EVATM on MVA. The correlation between the positive EVATM and the negative EVATM against MVA were studied. They concluded that, there is a strong positive relationship between EVATM and market values for value creators, while the negative relationship for value destroyers is inconsistent with expectations. They found that positive EVATM is higher correlated with MVA than the negative EVATM.

In turn, Turvey et al. (2000) studied the relationship of the highs and lows of EVATM against market return. Their results were consistent with other researchers that, positive EVATM will correlate with higher market return. Stewart (1994) stated that, the positive EVATM and positive MVA correspond to each other quite well among US companies, whilst, the relationship between negative EVATM and negative MVA does not hold very well. Based on the stated literature, many studies found that positive EVA or value creator companies correlate and explain the relationship with the stock return better than negative EVA or value destroyer companies. Will the same condition apply to this study? Thus, the first hypothesis of the study is Positive EVA per share is not able to provide more information than negative EVA per share in explaining the variation of stock return.

The relationship between positive and negative EVA with accounting performance

We believe that companies with positive EVA's lead to better organisation and have strong market positions. Such findings will result in higher stock return for these companies. This study believes that companies that have positive EVA value or value creator companies have a strong accounting returns and better market positions. In addition, they might also have higher profits and good accounting indicators, since a positive EVA is indicative that companies have high excess profit after deducting cost of investments. This again will be indicating that, the company is well organised in reaping higher returns exceeding investor's expectations. Returns on investment made by this type of company will also be higher than returns expected by the investors.

Turvey et al. (2000) investigated the claims that EVA

per share was superior compared to accounting and stock market measures of performance by a ranking methodology and then simple regression. They found that companies with higher EVA do not promise to produce higher annual returns. In ranking methodology the finding was not consistent, in which companies with high EVA values but has low values in accounting ratios. The simple regression also produced results consistent with ranking methodology, in which higher EVA does not promise that a company will produce higher accounting results. Only few ratios are able to hold the idea that high EVA will produce higher ratios that is ROA and ROE.

However, the above finding is contradictory with the observations by the EVA supporters that, the higher the value of EVA leads to better company performance. They believe companies that concentrated in improving the company EVA will inevitably result in an increase in its accounting return, and are reflective better organised firms. Does this condition apply to Malaysian companies? This leads to the second hypothesis which is companies with positive EVA per share will not be able to explain the accounting performance better than companies with negative EVA per share.

The relationship between EVA with stock return for different variation period of study

Based on available literature, many researchers conducted studies on EVA and stock returns but with a different variation period of study. Some were conducted for longer period, more than 10 years while the others were more short term. O' Byrne (1997) had found in their study, the longer the period of study, the better correlation between EVATM in explaining stock return. They compared its relationship of 5 and 10 years term and found that, the longer the period of the study, the better the correlation between EVA and stock return, due to the stability of performance.

However, Isa and Lo (2001) had found that a longer period will not produce significant correlation between EVATM and company performance (MVA). They found the R-squared for a 5 years study period was 0.2% which was lower than for a one year study period, thus EVATM only produced better correlations when a shorter period of study was conducted. However, it is believed that this hypothesis deserves to be tested again in Malaysia under different conditions under a longer period of study e.g. extending beyond 10 years where market performance is not MVA but covered by stock return instead. Based on the previous points of view and results of previous study, the third hypothesis of the study is EVA per share is not able to explain the variation in stock return better, than when the study period is longer.

RESEARCH METHODOLOGY

EVA is defined as the dollar amount of net operating profit after tax

(NOPAT) minus the dollar charge for capital (both debt and equity) obtained by multiplying the percentage of weighted average cost of capital (WACC) (Cordeiro and Kent, 2001). EVA is an estimate of the amount by which earnings exceed or fall short of the rate of return shareholders and lenders could get by investing in other securities of comparable risk and includes a charge against profit for the cost of all the capital a company employs. They had used EVA as the independent variable of their study. In this study, EVA per share is used as the independent variable of the study. In this study, EVA is calculated based on Cordeiro and Kent (2001) which is as follows:

$$EVA = NOPAT - (WACC \times \text{Invested capital}).$$

where,

NOPAT = Profit and loss before tax + Interest expense – Income taxes – Tax shield on interest (Tax rate X Interest expense),
Invested capital = Short term debt + Long term debt + Minority interest + Shareholders equity¹,

WACC = Cost of debt X {Total debt / (Total debt + CMVE)} X (1 – Tax) + [Cost of equity X {(CMVE / (Total debt+ CMVE))}]²,
CMVE = Company's share price X Total shares outstanding,
Market value of company = CMVE + Total debt + Minority interest,
Cost of equity is calculated by using CAPM model³

Exploratory designs and correlational method have been chosen for this study, since the purpose of the study is to explore the relationship of EVA and company performance. The analysis will be using panel pool data regression models which are only available from econometrics software tools. The analysis will use time series and cross section analysis simultaneously. The findings on each performance tool and stock return is analysed at this level. This analysis tool is used since panel pool data regression is able to take account for larger sample sizes and longer periods of study concurrently. The sample of the companies comprise most of the public listed companies in Bursa Malaysia (and which data available) over the period 1993 to 2002. Based on these criteria, for period between 1997 to 2002, 245 samples of Main Board companies were selected which involved 1440 observations. While for period between 1993 to 2002, 75 Main Board companies were selected which involved 750 observations. The longer period has less observation due to constraint of data availability.

ANALYSES AND FINDINGS

The regression analysis for the period 1993 to 2002 consists of 750 observations, 463 observations comprise negative value of EVA (value destroyer) while 287 observations comprise positive value of EVA (value creator). Positive EVA per share and stock return produced an adjusted R² of -0.21%, but was not significant (Table 1). While, negative EVA per share and stock return produced an adjusted R² of 0.05% but also not significant (Table 2). These indicate that, for regressions between value creator and destroyer with stock return for periods over 10 years, both variables are

¹ All the above items are based on the financial statements in the annual report of each company for the year 1993-2002

² WACC = CD X {TD / (TD + CMVE)} X (1-T) + [CE X {(CMVE / TD + CMVE)}]

³ CAPM Model, equal Risk free rate + Beta (Market Return- Risk free Rate) or Risk free Rate + Company's Risk Premium or Risk free Rate + (Company's Beta X Market Risk Premium)

Table 1. Regressions between positive EVA per share and stock return for the year 1993 to 2002.

Dependent variable: Return				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.407889	4.681585	1.155141	0.2490
Positive EVA	-2.877108	4.590693	-0.626726	0.5313
R ²	0.001376		F-statistic	0.392786
Adjusted R ²	-0.002128		Prob(F-statistic)	0.531340

Table 2. Regressions between negative EVA per share and stock return for the year 1993 to 2002.

Dependent variable: Return				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.320270	0.078519	4.078888	0.0001
Negative EVA	-0.068993	0.062189	-1.109405	0.2678
R ²	0.002663		F-statistic	1.230780
Adjusted R ²	0.000499		Prob(F-statistic)	0.267834

Table 3. Regressions between positive EVA per share and stock return for the year 1997 to 2002.

Dependent variable: Return				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.194571	2.021721	1.085497	0.2781
Positive EVA	-0.969400	1.753234	-0.552921	0.5805
R ²	0.000481		F-statistic	0.305722
Adjusted R ²	-0.001093		Prob(F-statistic)	0.580512

not had a relationship with the stock return, since both models are statistically insignificant.

The regression analysis for the period of 1997 to 2002 consists of 1468 observations comprising 827 observations of negative value of EVA (value destroyer) with 641 observations are positive value of EVA (value creator). Positive EVA per share and stock return produced an R² of 0.048%; however, the regression model is not significant (Table 3). While, negative EVA per share and stock return produced an R² of 0.27% and the regression model is also not significant (Table 4). These indicate that for regressions analyses between value creator and destroyer with stock returns for a period of 6 years, both did not had a relationship with stock return since both models were not statistically significant.

The studies conclude that, regression analysis between value creator and destroyer covering stock return over a period of 10 years that involves 750 observations, and studies for a period of 6 years which involves 1468

observations, indicates that neither value creator nor value destroyer had a relationship with stock returns, since both models are statistically insignificant. Thus, we neither reject nor accept the null hypothesis that negative EVA per share could provide more information than positive EVA per share in developing the relationship with stock return, since both negative and positive EVA are not correlated statistically significant with the stock return in contrast to the findings by Turvey et al. (2000).

The regression analysis for the period of 1993 to 2002 consists of 750 observations, 463 observations comprised of negative value of EVA (value destroyer) while 287 observations comprised positive value of EVA (value creator). Positive EVA per share produced an adjusted R² of 23.41% and a correlation coefficient β of 0.39. The result indicates there is a positive correlation between positive EVA per share and EPS (Table 5). Similarly, negative EVA per share produced an adjusted R² of 3.30% and a correlation coefficient β of 0.14, and there appears to be a positive correlation between negative

Table 4. Panel pool regressions between negative EVA per share and stock return for the year 1997 to 2002.

Dependent variable: Return				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.255080	0.214293	1.190336	0.2343
Negative EVA	-0.092094	0.191983	-0.479698	0.6316
R ²	0.000279		F-statistic	0.230110
Adjusted R ²	-0.000934		Prob(F-statistic)	0.631569

Table 5. Regressions between positive EVA per share and EPS for the year 1993 to 2002.

Dependent variable: EPS				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.197319	0.042179	4.678094	0.0000
Positive EVA	0.388919	0.041361	9.403135	0.0000
R ²	0.236782		F-statistic	88.41895
Adjusted R ²	0.234104		Prob(F-statistic)	0.000000

Table 6. Regressions between negative EVA per share and EPS for the year 1993 to 2002.

Dependent variable: EPS				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.252257	0.043481	5.801501	0.0000
Negative EVA	0.141013	0.034438	4.094651	0.0000
R ²	0.035093		F-statistic	16.76616
Adjusted R ²	0.033000		Prob(F-statistic)	0.000050

EVA per share and EPS (Table 6). These indicate that for regressions between value creator and value destroyer with earning per share, value creator had a better relationship with earnings than value destroyer. The results also indicate that, value creators are better multipliers than value destroyers, since the coefficients correlation for value creators was higher (0.388919), value creator had a better relationship with earnings than value destroyer.

The regression analysis for the period of 1997 to 2002 consist of 1468 observations, 827 of the observations are negative value of EVA (value destroyer), while 641 observations are positive value of EVA (value creator). Positive EVA per share produced an adjusted R² of 8.85% and a correlation coefficient β of 1.08E+08, which indicates a positive correlation between positive EVA per share and NOPAT (Table 7). Negative EVA per share and NOPAT have produced an adjusted R² of 0.034% but not statistically significant (Table 8). This indicates that, the regression analysis between value creator and value

destroyer with net operating profit after taxes, value creator had a better relationship with NOPAT than value destroyer, because 8.85% of the variation in earnings can be explained by the variability in value creator compared with value destroyer. The results also indicate that, value creators are better multipliers than value destroyers since the coefficients of correlation for value creator is higher. We thus conclude that, value creators had a better relationship with earnings than value destroyers.

In summary, the study thus concludes that for regression between value creator and value destroyer with earnings (represented by EPS and NOPAT), value creators had a better relationship with earnings than value destroyers. The findings indicate that, value creators are better multipliers of earnings than value destroyers. Thus, we reject the null hypothesis that company with negative EVA per share have better accounting performance, since the positive EVA is highly correlated and had a better relationship with earning than negative EVA. This finding is consistent with findings by Stewart

Table 7. Panel pool regressions between positive EVA per share and NOPAT for the year 1993 to 2002.

Dependent variable: NOPAT				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	52760680	20625828	2.557991	0.0110
Positive EVA	1.08E+08	20225380	5.363684	0.0000
R ²	0.091689		F-statistic	28.76911
Adjusted R ²	0.088502		Prob(F-statistic)	0.000000

Table 8. Panel pool regressions between negative EVA per share and NOPAT for the year 1993 to 2002.

Dependent variable: NOPAT				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	79726835	16534325	4.821898	0.0000
Negative EVA	5209877.	13095605	0.397834	0.6909
R ²	0.000343		F-statistic	0.158272
Adjusted R ²	-0.001825		Prob(F-statistic)	0.690937

Table 9. Panel pool regressions with common coefficients between EVA per share and stock return for the year 1993 to 2002.

Dependent variable: Return				
White cross-section standard errors and covariance (d.f. corrected)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.610254	0.013905	115.8048	0.0000
EVA	0.076613	0.011871	6.453827	0.0000
R ²	0.211821		F-statistic	19.86037
Adjusted R ²	0.201155		Prob(F-statistic)	0.000000

(1994), Turvey et al. (2000), and Isa and Lo (2001).

For the ability of EVA per share in explaining the variation in stock return in a longer study period, the main board listed companies' data for the period 1993 to 2002 covering ten years (the longer period) and data for the years 1997 to 2002 over six years period (the shorter period) is used in the panel pool regression analysis. The panel pool regression with common coefficients analysis over the longer period of EVA per share produced an adjusted R² of 20.12% and produced a positive correlation coefficient β of 0.077 (Table 9). Similarly, the shorter period of EVA per share produced an adjusted R² of 12.76% and a positive correlation coefficient β of 0.061 (Table 10). This indicates that, for panel pool regression with common coefficients over the longer and shorter period of EVA per share with stock return, the longer period of coverage of EVA per share had a better relationship with the stock return than the shorter period.

Panel pool regression with period specific coefficients analysis over the longer period of EVA per share produced an adjusted R² of 23.85% and a correlation coefficient β of 0.10 for 1995, 0.17 for 1997, 0.13 for 1998 and 0.09 for 2001 (Table 11). Likewise, coverage over the shorter period of EVA produced an adjusted R² of 13.71% and a correlation coefficient β of 0.06 for 1997, 0.07 for 1998 and 0.90 for 2001 (Table 12). This indicates that for panel pool regression with period specific coefficients over the longer period and shorter period EVA per share with stock return, coverage over a longer period EVA per share had a better relationship with stock return than the shorter period.

In summary, the study concludes that for regression with common or period specific coefficients, the longer period of EVA had a better relationship with the stock return than shorter period. Thus, we reject the null hypothesis since a longer period of the study for EVA per

Table 10. Panel pool regressions with common coefficients between EVA per share and stock return for the year 1997 to 2002.

Dependent variable: Return				
White cross-section standard errors and covariance (d.f. corrected)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.856009	0.011847	72.25721	0.0000
EVA	0.061214	0.014305	4.279148	0.0000
R ²	0.131194		F-statistic	36.06511
Adjusted R ²	0.127557		Prob(F-statistic)	0.000000

Table 11. Panel pool regressions with period specific coefficients between EVA per share and stock Return for the year 1993 to 2002.

Dependent variable: Return				
White cross-section standard errors and covariance (d.f. corrected)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.845112	0.322603	5.719457	0.0000
1993--EVA_1993	-0.362239	0.273992	-1.322079	0.1866
1994--EVA_1994	0.031080	0.194146	0.160084	0.8729
1995--EVA_1995	0.102243	0.042872	2.384812	0.0173
1996--EVA_1996	0.022939	0.042520	0.539496	0.5897
1997--EVA_1997	0.170183	0.052427	3.246081	0.0012
1998--EVA_1998	0.125861	0.048390	2.600971	0.0095
1999--EVA_1999	-0.053928	0.072991	-0.738825	0.4603
2000--EVA_2000	-0.078856	0.104459	-0.754893	0.4506
2001--EVA_2001	0.091702	0.030683	2.988709	0.0029
2002--EVA_2002	9.355038	10.11617	0.924760	0.3554
R ²	0.257849		F-statistic	13.34883
Adjusted R ²	0.238533		Prob(F-statistic)	0.000000

Table 12. Panel pool regressions with period specific coefficients between EVA per share and stock return for the year 1997 to 2002.

Dependent variable: Return				
White cross-section standard errors and covariance (d.f. corrected)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.022996	0.248787	4.111940	0.0000
1997--EVA_1997	0.063756	0.035579	1.791972	0.0733
1998--EVA_1998	0.072111	0.021606	3.337580	0.0009
1999--EVA_1999	-0.101878	0.079567	-1.280401	0.2006
2000--EVA_2000	-0.062108	0.060073	-1.033867	0.3014
2001--EVA_2001	0.089996	0.026610	3.382077	0.0007
2002--EVA_2002	4.621192	5.522278	0.836827	0.4028
R ²	0.143741		F-statistic	21.79266
Adjusted R ²	0.137145		Prob(F-statistic)	0.000000

share had a better relationship with stock return than shorter period. These findings are consistent with the

work of O' Byrne (1997), but contradict findings of (Isa and Lo, 2001).

CONCLUSION AND DISCUSSION

From the analysis stemming from the first hypothesis, the study has drawn conclusions that regression analyses between positive EVA (value creator) and negative EVA (value destroyer) with stock return over the period of 10 years (covering 750 observations) and over the period of 6 years (covering 1440 observations), 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).

In relation to the analysis on the second hypothesis, the study found that when value creator and value destroyer were regressed with earnings (represented by EPS and NOPAT), 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 (such finding are consistent with findings from Stewart (1994), Turvey et al. (2000), and Isa and Lo (2001). It indicates that the increments of EVA value in value Creator Company tend to increase accounting profit at a higher rate than in value destroyer companies. The third hypothesis evaluates regression for common coefficients and period specific coefficients analysis over a longer period and shorter period of study. It indicates that EVA had a better relationship with stock return over a longer period of the study. These findings are consistent with finding from O'Byrne (1997) but are contradicted by findings by Isa and Lo (2001).

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