

## **Analysis of shareholder value using Economic Value Added and Conventional Accounting Measures: Evidence from Ghana**

**Maxwell Dela Yao Gakpo<sup>1</sup>, Charlotte Agyei<sup>2</sup> and Vera Graham Asante<sup>3</sup>**

*<sup>1</sup> Researcher, SMC Business School, Ghana, Box AN 18256, Accra North,*

*<sup>2</sup> Managing Director, Premier Skin Consult and Premier Trust, Kumasi, Ghana,*

*<sup>3</sup> Graduate School of Ghana Communication Technology University,*

### **Abstract**

This study investigates shareholder's value through the application of Economic Value Added, Conventional Accounting indicators and Market Values Added measures on listed banks on the Ghana Stock Exchange. Using the financial statements of the listed banks from 2004 to 2014, the correlation and regression models were applied to evaluate the shareholders' value creation from Economic Value Added and other Conventional Accounting measures. The study revealed that the listed banks recorded positive Economic Value Added throughout the period. The study ranked Standard Chartered Bank, Ecobank Ghana and Ghana Commercial Bank as the first three leading banks in creating shareholder value. The study found a strong and significant association between Economic Value Added and Market Value Added. The study also showed that Economic Value Added explained more variations in Market Value Added of the sampled banks than Conventional Accounting measures. The paper made key recommendations.

**Keywords:** Conventional Accounting Measures; Economic Value Added; Market Value Added; Ghana Stock Exchange; Shareholder Value Creation.

## **1. INTRODUCTION**

Tight competition, rapid technological change, high inflation pressures and volatility of capital market currently facing the Ghanaian banking industry have intensified the pressure on bank managers to maximize the value of their shareholders through increase performance. Banks play critical role in national economic development. Banks contribute to national economic growth through granting of credit facilities to individual enterprises as well as corporations. The banking sector's immense consequence on the country's economy requires careful evaluation to avoid or lessen any systemic effect (Soemitro & Anantadjaya, 2013). Therefore, the selection of performance indicators for Ghanaian banks is very crucial for national economic growth. Performance evaluation and the deployment of appropriate metrics play significant role in designing tactical strategies, monitoring, and measuring accomplishment of organizational goals and compensating employees and shareholders appropriately (Venanzi, 2012). Hence, this paper investigates the shareholder's value through the application of Economic Value Added (EVA), Conventional Accounting Measures (CAM) and Market Values Added (MVA) of listed banks on the Ghana Stock Exchange.

## **2. LITERATURE REVIEW**

The theoretical frameworks and review of literature is in four subdivisions: shareholder value, CAM, MVA and EVA. The shareholder value concept began receiving major backing during the 1980's and 1990's and has become the ultimate goal for every company in recent times. According to Wittrup and Jensen (2012), the creation and improvement of shareholder value in a bank, is even more important than for regular enterprise. Banks need to attain growth through equity shares which is easier attained if investors perceive rewards through value addition. Investor's value expansion in banks is very crucial because of the vital role banks play in financial growth of every country. The development of capital markets, enrichment of stockholder involvement, institutional shareholders with huge equity shares and dynamic executive directors have all supported to intensify the burden on banks to constantly increase shareholder value creation. According to Stancic, Čupić and Stancic (2012) creating and increasing shareholder value, as primary goal of financial management, involve the use of performance measures that can accurately reckon changes in value of the company. According to Casalegno, Elisa, Cerruti and Pellicelli (2009) the concept of value has a sturdy financial implication that connects to share value. According to Pinto and Machado-Santos (2011), funding in a corporate institution normally assumes a growth in the capital and receiving particular yield on the capital invested.

According to Sharma and Kumar (2012), CAM was established at a time when policy making was concentrated at the center of the firm and tasks for decision-making were very well-defined. Accounting Indicators were anticipated to assess responsibilities and duties to certify that workers achieve their target and organizational rules and regulations are strictly adhered to. CAM such as Return on Equity, Return on Assets, and Earning per Share, Return on Equity and Return on Capital Employed which generally mirror operation level and economic position of companies are objectively representative indicators of profitability assessment. According to Pinto and Machado-Santos (2011) financial performance analysis based on CAM is critical for measuring the economic and financial performance of firms. However, other researchers recount the inherent limitations of CAM (Chen, Wang & Qiao, 2013; De Klerk, 2012; Panahi et al., 2014; Venanzi, 2012).

Stern (1990) introduced EVA as performance indicator which serve as an improvement over CAM. The basic ethics of EVA is economic profit. Thus, a company generate wealth for owners when return is greater than the cost of capital used to create the return. Stewart in (1994) also extended EVA as an influential performance metric that has gained popularity in the corporate world. EVA which poses as a device of assessing; communicating a company's performance; tool for drawing up performance targets; rewarding employees and for appraising investment ventures. According to Moy (2013) the concept of EVA offers the chance for analysts and owners to boost their capability in assessing management ability to increase value. Tian, Song, Li and Zhang (2013) EVA considers for all capital cost (both equity and debt) for bringing companies' profit into account, and the basic principle is that the return from capital at least can compensate the stockholder for investing. According to Nakhaei, et al (2013) from stockholders, EVA determine their wealth creation source after all cost have been catered for and guarantees shareholders concerning the reasonable rate compensation for the acquired shares and the retention of the future growth potential of the corporation's past trend accordingly; from managers and employees viewpoint; EVA provides explanations for the outcome attained after adopting policy and provides the basis for comparing the actual outcome with the expected results of the strategy selection, the viability of a strategy. From the creditors' perception EVA offers evidence concerning the credit sums reimbursement and compensation capacity of the enterprise.

The concept of EVA calculates the cost of equity as each fund has cost, and money does not come into the company by itself. Ismail (2011) used the following formula:  $EVA = NOPAT - (WACC \times Invested\ capital)$ ; where;  $NOPAT = profit \ \& \ loss \ before \ tax + interest \ expense - income \ taxes - tax \ shield \ on \ interest \ (tax \ rate \times interest \ expense)$ ; and  $Invested \ capital = short \ term \ debt + long \ term \ debt + minority \ interest + shareholders' \ equity$ .  $Invested \ capital = Total \ assets - current \ liabilities$  Components of EVA. However, the challenge with EVA is that the metric divulges nothing about the

company prospects (Pinto & Machado-Santos, 2011). Moreover, EVA fluctuates considerably over a period and it is significantly connected with accounting variables. Also, EVA is covering metric that stares into a corporation's historical performance and delivers no information of a company's future performance (Athanasakos, 2007).

The fourth theoretical basis for the study is MVA. MVA evaluates the wealth added by the management over and above the funds invested in the business by owners (Kaur & Narang, 2009). This measure displays how management has enriched shareholders wealth or shrunk owner's funds. MVA signifies perfect momentary valuation of business performance that demonstrates how efficacious a company has been in utilizing and managing capital resources to enhance the value of the enterprise and the wealth of owners.  $MVA = \text{Market Value of the firm} - \text{Economic Capital}$ . The economic capital includes debt and equity funding. The market value of a firm as denoted by market value of equity is arrived at by multiplying stock price by the number of outstanding shares of firm.

Recent studies relating to theories of Shareholder Value Creation, CAM, EVA and MVA have become increasingly important in the field of corporate finance and governance. Scholars and practitioners have elucidated the merits and flaws of CAM and designed value-based metrics such as EVA and MVA as remedy to the Accounting limitations. The concepts of EVA and MVA are innovative ways to assess the performance of bank management in terms of shareholder worth creation. The Value-Based Measurement indicators define companies' worth and performance based on their economic and markets conditions, and not according to bookkeeping numbers produced using GAAPS. Accounting indicators such as EPS, ROCE, RONW, etc., do not infer the shareholders' real return, because these measures only account for the borrowing cost and not equity cost. According to Chen et al, (2013) disregarding capital costs will lead to inadequate cost information and influence product pricing, which may lead to management making wrong decision and ultimately reducing shareholder value. Mahoney (2011) suggested that financial stakeholders require returns, not profits. Porter and Kramer (2011) proposed the creation of shared value as the new main objective of the company.

### **3. RESEARCH METHODOLOGY**

This study used an empirical and correlational research. A descriptive correlational analysis was used to test the relationship between EVA and MVA and other Accounting Measures to understand which best explains the changes in MVA of the selected banks using a ten-year financial report of the listed banks from 2004 -2014.

Hence, the research modelling captures the testing of three (3) hypotheses. The first research model examines the association between EVA and MVA. In order to test the

first hypothesis, the model was formulated:  $MVA_{it} = \beta_0 + \beta_1 EVA_{it} + \epsilon_{it}$ . Where;  $i$  – bank,  $t$  – period, and EVA is the independent. The second model examines the association between the various corporate performance measures and the Market Value of Ghanaian Listed Banks. To test the second hypothesis, this model was formulated.  $MVA_{it} = \beta_0 + \beta_1 EVA_{it} + \beta_2 EPS_{it} + \beta_3 ROCE_{it} + \beta_4 RONW_{it} + \beta_5 NOPAT_{it} + \beta_6 NI_{it} + \beta_7 RI_{it} + \epsilon_{it}$ . Where;  $i$  – firm,  $t$  – period, EVA, EPS, and ROE, ROCE and NOPAT – independent variables. The third set of models investigates whether EVA components can explain contemporaneous MVA beyond that explained by the others performance metrics. This model is also estimated by using the pooled ordinary least squares:  $MVA_{it} = \beta_0 + \beta_1 OCF_{it} + \beta_2 ACC_{it} + \beta_3 ATI_{it} + \beta_4 CC_{it} + \beta_5 IE_{it} + \epsilon_{it}$ . Where; CFO – Cash flow, ACC – Accounting Accruals, ATI – After tax interest cost, CC – Capital Charge and ADJ – Stern-Stewart Accounting Adjustments.

## **4. DISCUSSION AND ANALYSIS OF RESULT**

### **4.1 Correlation analysis**

The Pearson correlation was adopted to measure the degree of relationship between EVA and MVA. Table 4.3 presents the result of Pearson Correlation Analysis. The Pearson's  $r$  for the correlation between the EVA and MVA variables is 0.925. This means that there is a strong relationship between EVA and MVA. This also means that changes in EVA variable is strongly linked with changes in the MVA. Correlation is significant at the 0.01 level (2-tailed) therefore the rejects null hypothesis and the alternative hypothesis is accepted.

### **4.2 Regression analysis**

In order to confirm the rejection of the null hypothesis 1, a simple regression model was applied to test the null hypothesis. Table 4.4 presents the result of model one. The R-squared was 86% and adjusted R-squared was 84%, Durbin-Watson statistic was 2.913 and p-value was 0.000 ( $p < .001$ ). The adjusted R-squared value illustrated how well the regression equation fits the data. The adjusted R-squared of 84% indicated that the given predictor (EVA) explicates 84% of the variation in MVA. The Durbin-Watson statistic is a determinant of autocorrelation, which deals with the possible difference in data due to time elapsed. Since the p-value is 0.000, it provides the basis for rejecting the null hypothesis 1. There is a statistically significant relationship between EVA and MVA of Ghanaian listed banks on GSE.

The univariate regression equation for MVA and EVA is:

$$MVA_{it} = \beta_0 + \beta_1 EVA_{it} + e_{it} \dots \dots \dots (1)$$

$$MVA (y) = 169079 (\text{Constant}) + 4.378 (EVA).$$

An ordinary least squares regression was also done with NOPAT(x) as an independent variable and MVA (y) as the dependent variable to gain more understanding:

$$MVA_{it} = \beta_0 + \beta_1 NOPAT_{it} + e_{it} \dots \dots \dots (2)$$

Where  $MVA_{it}$  (y) is the dependent variable  $\beta_0$  is the Intercept,  $\beta_1$  as NOPART the independent variable and  $e_{it}$  as the error term. Table 4.5 presents the outcome of the second equation. The adjusted R-squared value ( $r^2 = 72.2\%$ ), Durbin-Watson statistic ( $d = 2.452$ ) and P-value ( $p = 0.001$ ). The adjusted R-squared value of 72.2% indicated that the given predictor (NOPART) in Table 4.6 could explain 72.2% of the variation in Market Value Added. The equation is:  $MVA = 107065.9 (\text{Constant}) + 1.6 (\text{NOPART})$ .

Since the adjusted R-squared of 84% of EVA (table 4.4) explains more variation in the MVA than the explanation given by the adjusted R-squared of NOPART 72%, EVA can therefore be used as substituted for MVA. Table 4.6 presents the result comparing the adjusted R-squares EVA and NOPAT. MVA is positively related to both EVA and NOPAT in the same periods. However, NOPAT explains slightly less (12%) of the total variation in MVA than EVA does. This suggests that the level of EVA is not only a better proxy, but a better predictor of MVA for Ghanaian banks performance than the level of NOPAT.

To test null Hypothesis 2 for the incremental value-relevance or information usefulness of EVA over the value-relevance of CAM, the following multivariate regression model was applied:

$$MVA_{it} = \beta_0 + \beta_1 EVA_{it} + \beta_2 EPS_{it} + \beta_3 ROCE_{it} + \beta_4 ROE_{it} + \beta_5 NOPAT_{it} + \beta_7 ROA_{it} + e_{it} \dots \dots \dots (3)$$

Table 4.7 displayed the coefficients (-27.39629), standard errors (41.75702), t-statistics (-0.66), F-statistic (0.3566), Durbin Watson (2.407), R-squared (0.8816) and adjusted R-squared (0.4672) for this model (Equation 3) and indicates that all six-performance metrics, that is, EVA, EPS, NOPAT, RONW, ROCE and ROA are positively associated with MVA. The coefficients for EVA, ROE and ROCE are 0.9773, 4.2561 and 3.6846 respectively, are all significant at 5%, whereas the coefficients of ROA, EPS and NOPART are not statistically significant. The overall adjusted R- square of 46.72% indicates that only 47% of variations in MVA can be only explained by all the variables together leaving most of the proportion of changes in MVA of Ghanaian banks on GSE

unexplained.

To understand which performance metric yields the highest value-relevance, in explaining the changes in MVA of Ghanaian Listed banks, each of the six explanatory variables was evaluated (see table 4.7). To accomplish this, each of these independent variables was specified as the explanatory variable in separate univariate regressions with MVA as the dependent variable. Value-relevance was then assessed by linking adjusted the R-squared for the six univariate regressions.

To investigate which of the six predictors of MVA (shareholder wealth) offers value-relevance beyond that provided by other measures, the value-relevance of each of the six explanatory variables was evaluated. The tables 4.8 presents the summary of univariate regressions. The results show that EVA has the greatest value-relevance as possesses the greatest information power in explaining the variation in the MVA. The results showed EVA adjusted R-squared (84 %) followed by NOPAT (72.12%), ROA (66.40%), ROE (31.0%), EPS (14.11%) and ROCE (-0.09%). EVA has adjusted R-squared (84 %) which is higher value relevance than any of Traditional Measures like NOPAT, RONW, ROA and ROCE.

The EVA components for analyzing the hypothesis 3 include OCF, AA, ATI, CC and IE. Hypothesis 3 was tested with the intention of knowing the explanatory power of each component of EVA in explaining the MVA of the Ghanaian listed banks on GSE.

$$MVA_{it} = \beta_0 + \beta_1 OCF_{it} + \beta_2 AA_{it} + \beta_3 ATI_{it} + \beta_4 CC_{it} + \beta_5 IE_{it} + \epsilon_{it} \dots \dots \dots (4)$$

The result showed that all five components of EVA; OCF, AA, ATI, CC and IE are positively associated with Market Value Added. The coefficients for of OCF, CC and IE, are 1216957, 373105.3 and 8256.802 respectively are all significant at 5%, whereas the coefficients of AA, and ATI are not statistically significant (see table 4.9). The overall adjusted R- square is 58 percent which indicates that components of EVA are able to explain the 58% of variations in the Market Value of Ghanaian listed banks on GSE.

The next step is to test hypothesis 3. To address this incremental value-relevance question the value-relevance of each of the five explanatory variables of EVA, that is, OCF, ACC, ATI, CC and IE, along with CAM were evaluated to know which independent variable contributes most to the variation in Market Value of Ghanaian listed banks. Table 4.10 presents the results of each univariate regressions with MVA as dependent variable. The key observation of findings of hypothesis 3 indicates OCF (77.2%) but overall, EVA has the greatest value relevance that is, EVA possesses the greatest information power in explaining the changes in MVA.

## 5. CONCLUSION

Bank managers and the various regulatory institutions and other stakeholders in the industry need to be aware of a bank's performance to enable all shareholders to make well-informed judgments about the future returns of their investments. Measuring the financial performance of the banks is therefore very significant. The range of performance measurements and the diversity of companies make this an intricate task. EVA is one of the economic measures used for determining the exact earnings of a listed bank. The deployment of EVA would only be appreciated if Management knows the profit rewards in its application to enhance the profitability of their banks. EVA can be a vibrant tool that managers can apply to measure and boost the financial performance of their banks. EVA takes into account the interest of shareholders. Therefore, the use of EVA by bank managers would lead to diverse decisions than if Management depends solely on Accounting-based measures (Popa, 2009).

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## APPENDICES

**Table 4.1 Overall Ranking with Based Mean EVA and MVA**

BANK	EVA	Ranking	MVA	Ranking	Average	Final/ranking
SCTB	662,165	1	6,272,089	1	3467127	1 <sup>st</sup>
GCB	606,475	2	2,862,882	3	1734679	3 <sup>rd</sup>
ECOB	569,055	3	4,348,677	2	2458866	2 <sup>nd</sup>
CALB	288,424	4	(1,203,169)	6	(457373)	6 <sup>th</sup>
HFCB	199,821	5	133,158	5	166490	5 <sup>th</sup>
SG-SSB	179,004	6	413418	4	296211	4 <sup>th</sup>

**Table 4.2 Sample features Depicting Direction of EVA and MVA**

Category A	Category B	Category C	Category D
E- M-	E+ M+	E- M+	E+ M-
No sampled bank fell in this category	Standard Chartered Bank, Ecobank, Ghana Commercial Bank, HFC Bank, and SG-SSB	None of the banks fell in this category	Cal Bank

**Table 4.3 Pearson Correlation Coefficient for EVA and MVA**

		EVA	MVA
EVA	Pearson Correlation	1	0.925**
	Sig. (2-tailed)		0.000
MVA	Pearson Correlation	0.925	1
	Sig. (2-tailed)	0.000	

Correlation is significant at the 0.01 level (2-tailed).

**Table 4.4 Regression Equation one: MVA Coefficients and Key Regression Statistics**

Variable	Coefficient (unstandardized)	Coefficient. (standardized)	Std. Error	T-Val	Probability
Constant	169079		184696.8	0.92	0.384
EVA	4.378	7.29	0.600537	7.29	0.000
R-squared	0.86.0				
Adjusted R-Squared	0.84.0				
Durbin-Wat	2.91353.15				
F-Statistic					

**Table 4.5 MVA and NOPAT Coefficients and key Regression Statistics**

Independent Variable	Coeff. (Unstandz)	Std. Error	T-Statistic	P-value
(Constant)	107065.9	261631.6	0.41	0.692
NOPAT	1.600756	0.3088339	5.18	0.001
R-squared	0.7491			
Adjusted R-Squared	0.7212			
Durbin-Watson stat	2.452			
F-Statistic	22.416			
Significance	0.001			

$$MVA = 107065.9 (\text{Constant}) + 1.6 (\text{NOPART}).$$

**Table 4.6 EVA outperformed NOPART**

Independent Variable	R <sup>2</sup>	Adjusted R <sup>2</sup>
EVA	86.0%	84.0%
NOPART	75.0%	72.12%

**Table 4.7 Multivariate Regression Results**

Independent variables	Coefficient	T-value	Std. Error	P-value
EVA	0.9773482	0.46	2.144557	0.693
ROE	4.256097	1.32	3.216351	0.317
ROA	-6.247576	-0.90	6.951911	0.464
ROEC	3.684633	0.86	4.297902	0.482
EPS	-0.3813779	-0.12	3.256071	0.917
NOPAT	-2.20112	-0.98	2.254808	0.432
constant	-27.39629	-0.66	41.75702	0.579
			F-Stat (2.13)	0.3566
			R-squared	0.8816
	Durbin Watson = 2.407		Adjusted R-squared	0.4672

$$MVA = -27.40 + 0.98EVA + 4.26ROE + 6.25ROA + 3.68ROEC - 2.20EPS - 2.20NOPAT.$$

**Table 4.8 Summary of relationship between MVA & Other performance Measures**

Independent Variable	R <sup>2</sup>	Adjusted R <sup>2</sup>
EVA	86.0%	84.0%
NOPAT	75.0%	72.12%
ROA	69.8%	66.40%
ROE	38.0%	31.0%
EPS	23.0%	14.11%
ROEC	9.2%	-0.09%

**Table 4.9 Regression MVA & Component Unique to EVA**

Independent variables	Coefficient	P-Value	S. E	T-Value
$\alpha$ (Intercept)	-6327296	0.0853	7694569	
OCF	1216957	0.130	671120.5	1.81
AA	-117956.2	0.858	624879.5	-0.19
CC	373105.3	0.770	1209191	0.31
IE	8256.802	0.967	191171	0.04
ACD	-776844.2			
F-statistic	3.78			
R <sup>2</sup>		0.7909		
Adjusted R <sup>2</sup>		0.5817		
Durbin Watson				

**Table 4.10 The Relationship between MVA and Independent Variables**

Independent Variable	R <sup>2</sup>	Adjusted R <sup>2</sup>
EVA	86.0%	84.0%
NOPAT	75.0%	72.12%
ROA	69.8.0%	66.40%
ROE	38.0%	31.0%
EPS	23.0%	14.11%
ROEC	9.2%	-0.09%
OCF	79.5%	77.2%
Accruals	60.2%	56.0%
Cost of Capital	3.2%	0.0754
Interest Expense	3.2%	-7.5%
Cost of Capital	3.2%	0.0754
After Cost of Debt	0.2%	-11%

