

## Do Pakistani Banks Create Value?

Naveed Ul Hassan<sup>1</sup>, Muhammad Zohaib<sup>1</sup>, Muhammad Shahbaz Yaqub<sup>1</sup> and Bilal Mehmood<sup>2</sup>

<sup>1</sup>Department of Management Science, Virtual University of Pakistan

<sup>2</sup>Department of Economics, Government College University Lahore, Pakistan

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### ABSTRACT

At the inception of joint stock companies, the shareholders were simply treated as investors and were believed to be entitled for dividend only. Management never felt any need to think in terms of shareholders wealth maximization. But with the passage of time, there has been a paradigm shift in setting the corporate objectives. Pressures build by the stockholders started to influence corporate boardrooms to “rethink their roles and those of their companies, especially as regards to value creation”. In business schools, we are able to fathom tools like earning per share, return on asset and return on equity but many of us are not aware of a set of value-based measures like cash value added, shareholders value added, cash flow return on investment, economic value added. Over a period of years, out of these measures economic value added has emerged as a winner. Economic Value Added (EVA) offers a consistent approach towards setting goals and measuring performance. This paper employed EVA theory on Pakistani listed commercial banks to validate the claim of Stewart as EVA to be a strong performance indicator. In this regard, an attempt has been made for examining relationship between market value added, economic value added, return on equity, return on capital employed, price-to-earnings ratio, and market to book value, with the consideration that EVA is the significant indicator of shareholder value creation in relation to other traditional accounting measures. For this purpose, fixed effects regression with Driscoll and Kraay standard errors (S.E) has been conducted and result showed positive correlation of EVA with MVA.

**KEYWORDS:**EVA, MVA, ROE, Value based measures, Traditional performance measures

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### 1 INTRODUCTION

There are different factors of shareholders’ wealth revolution including Globalization, Information technology advancement, Institutional investment expansion and generational changes in attitude towards savings and investment. Corporate boardrooms are now going to ‘rethink on their roles and their company roles, especially in regards to value creation due to pressures by stockholders (Young & O’Byrne, 2001).

In early years of Joint Stock Company, payment of dividends to shareholders was the only concern for management irrespective of the variation in shareholders’ earnings. With the passage of time, corporate objectives have been shifted towards performance measurement due to the advancement of corporate mindset and professional management. Now, the importance of shareholders’ wealth has been recognized and businesses need to think in terms of maximizing shareholders’ wealth. In order to achieve this particular objective, the activities of a firm should be inclined towards the maximization of shareholders’ wealth (Phani, B. V, & Bhattacharyya, 2000). Now, it is important to take good care of all company’s stakeholders including shareholders and board of directors (Parasuraman, 2000).

Achieving targets by motivating managers is an important element of performance evaluation. In the past, managerial performance was judged using traditional method of accounting. Some additional non-financial performance measures were also not able to measure managerial performance accurately. For Example, McDonalds evaluates the performance of its store management on the basis of product quality, sales volume, service cleanliness, personal training and cost control (Kaplan & Atkinson, 1989).

In business schools, we are able to fathom abbreviations like Earnings per share (EPS), Return on assets (ROA), Return on equity (ROE), etc. but many of us are not aware about a set of NEW value based measures like Shareholder value added (SVA), Cash flow return on investment (CFROI), Cash value added (CVA), and Economic valued added (EVA<sup>1</sup>) etc. Out of these value based measures, EVA is the most popular and well known terminology and a majority perceives all residual income concepts as EVA; in

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<sup>1</sup> EVA is a measure that captures true economic profit of an organization earned over time for its owners.

\* **Corresponding Author:** Naveed Ull Hassan, Department of Management Science, Virtual University of Pakistan.  
t.haider03@gmail.com

spite of the fact that these do not include main elements defined by Stern Stewart & Co. Up to 1970's the concept of residual income was not considered to be the prime performance measure for companies (Makelainen, 1998). Economic Value Added in the most renowned performance measure used by majority of organizations and their consultants. It is a registered trademark of Stern Stewart & Co. According to him EVA is the residual income that subtracts the cost of capital from the operational income.

Owing to its complex nature, it is difficult to implement EVA in banking industry although this sector is not an outsider in the context of shareholder revolution. Similar issues have also been faced by other emerging markets. Despite of extended amount of literature available on implementation of EVA in Non-financial firms, there is a lack of EVA literature about financial sector or more specifically banking sector.

### **1.1 Significance of the Study**

The empirical studies on the subject were unavailable in Pakistani context. This study fills the research gap by doing analysis of relationship between MVA and key financial performance measures.

### **1.2 Objectives of the Study**

- To reveal the relationship between Market Value Added (MVA) and Traditional measures of Performance.
- To suggest banking institutions to enhance their market value through economic value added context.

## **2. LITERATURE REVIEW**

Stewart (1991) was the first researcher who provided empirical evidence on correlation between EVA and MVA. He observed EVA as a performance measure, which captured the true economic profit of a firm. It was found closely linked to the shareholders' wealth creation over a period of time. He was of the view that decision role is very simple; positive EVA indicates that shareholder wealth is created and negative EVA indicates that shareholder wealth is destroyed. Stewart (1994) expanded EVA as a powerful new management tool that has gained worldwide recognition as the standard tool of corporate performance. EVA presents an integrated framework of financial management and incentive compensation.

Tully (1993) and Walbert (1994) observed the superiority of EVA empirically while evaluating the firms including AT&T, Briggs & Stratton, Chrysler, Compaq, GE, Quaker Oats, and Scott Paper etc. Later, Milunovich and Tseui (1996) found evidence that MVA was more linked with EVA as compare to EPS, EPS growth, ROE, FCF or FCF growth. Lehn and Makhija (1996) studied 241 US companies for two time slots (1987-1988 and 1992-1993) in order to find correlation between EVA & MVA with stock returns. They found a better correlation with EVA as compared with traditional performance measures i.e. ROA, ROE etc. They found a higher MVA for the firms having focus on their business activities and vice versa.

However, there are adverse findings found in EVA literature. Dodd and Chen (1996) found ROA much better in explaining stock returns than EVA. Hamel (1997) critical challenged the supremacy of EVA saying that it reveals little about a company's share of new wealth creation. McCormack and Vytheswaran (1998) found EVA having better correlation with MVA than other conventional parameters i.e. ROCE, RONW, EPS, etc. Shubita (2010) worked on information contents of EVA, RI, and accounting earnings for 39 industrial companies in Jordan. He observed that net income outperformed economic value added and residual income.

Up to late 80's in United States, EVA was much popular in non-financial sectors ignoring especially the banking sector for a much longer period of time. During the last decade of 19<sup>th</sup> century, Uyemura, Kantor and Petit (1996) produced the first ever comprehensive literature on bank EVA. He analyzed the largest 100 U.S. bank holding companies over a period 1986-95. He found EVA highest correlation of EVA with MVA than other accounting variables.

Erdogan *et al.* (2000) used the economic profit approach in measuring the firm performance listed at Turkish Stock Market. He empirically tested the Economic profit model and compared it with EVA. Verma (2000) observed banks' performance and found Indian banks capable enough to create shareholders wealth from 1996-97 to 2000-01 with the help of EVA and MVA. Banks' profiles showed a direct correlation between the investment in stakeholder relationships and corporate performance. Thampy and Beheli (2001) observed 12 Indian commercial banks working in the public and private sectors during 1990's with reference to economic profits as benchmark in determining performance measure. Their study revealed that the banks did not produce any EVA owing to the banks' inability to be overcapitalized and poor returns in the industry.

Verma (2002) suggested the importance of shareholders' wealth and stated that the stocks of an organization can never be attractive for the investors without it. Brigham and Ehrhardt (2002) worked on

association between EVA and MVA over a period of time. They came to know that a company with history of negative EVA might produce positive MVA as the investor might hope for good future profits and vice versa. They also concluded EVA as a better tool to be used as an incentive compensation program to enhance managerial performance.

Heffernan (2008) evaluated the performance of Chinese banks on the basis of four different measures of performance and found EVA and NIM to be the best indicators of performance. Taufik, Isnurhadi and Widiyanti (2008) found that EVA, ROA and ROE influence stock return of the banking sector whose stocks are listed at in Jakarta Stock Exchange for a period of four years i.e. 2002 – 2005 and observed EVA as superior to ROA and ROE in affecting the stock return. Shelagh, Heffernan & Fu (2010) found that EVA and Net interest margin performed better than conventional measures of profitability i.e. Return on average equity and Return on average assets. Teker, Teker and Sonmez (2011) employed an application of EVA concept as a performance indicator for Turkish banks.

In a study, Sivakumaran & Saravanakumar (2011) examined the association between EVA and other accounting measures - EVA, EPS, ROA and ROF using Pearson's Coefficient of Correlation over the sample of 39 Indian banks for the period of 2004-05 to 2010-11. They concluded that EVA can be used to measure the banks performance but it can't be used to predict the share prices of these banks as there was no relationship found between EVA and share prices. Costa (2012) suggested a framework for Implementing EVA in Brazilian Banks. Empirical results of the study indicated that EVA was significantly explained by most of the controlled variables i.e. interest margin, asset quality liquidity, and capital adequacy (Basel ratio). The natural logarithm of assets was also used as a measure for Market share and size. For Pakistan, there is no empirical study found, which associates these accounting-based measures with value-based measures. Keeping in view, this research has been conducted and it has taken all significant measures used in previous studies. The study aimed to check the validity of these accounting-based variables in explaining the shareholders' value in terms of market value added. After exploring the literature on EVA, it can be said that EVA has been proved a useful measure of corporate performance in the modern banking industry. However, enough empirical evidences have not been found from emerging banking industry through which it can be concluded that economic value added is a superior measure for the performance of this industry.

### 3. HYPOTHESIS OF THE STUDY

H<sub>1</sub>: EVA is more significant explanatory variables in explaining the variation in the Market Value Added than traditional measures.

### 4. RESEARCH METHODOLOGY

In order to examine the supremacy of EVA following variables have been selected for testing.

#### 4.1 Choice of Variables

**a) Dependent Variable.** In the modern world of Finance, MVA is used as a measure to determine the managerial performance with regards to value addition towards the shareholders' wealth. This wealth maximization is being done with the enhancement of spread between shares market value and the company's book value of invested capital. This spread – positively known as market value added (MVA).

**b) Independent Variables.** In this study, four independent variables Economic Value Added, Return on Equity, Return on Capital employed, Price to earnings Ratio and Market to book Ratio are used in order to know that which measure; either EVA or traditional accounting based measures are more significantly correlated with the Dependent variable.

#### 4.2 Computational Procedure of EVA

According to its inventor – Stern Stewart, EVA is computed by deducting appropriate cost of capital from net operating profit. Thus, the model in its simple form is:

$$EVA = NOPAT - (\text{Invested Capital} \times \text{Cost of Capital})$$
 where;

$$\text{Capital Invested} = \text{Book Value of Equity} + \text{Capitalized R\& D Expenses} + \text{Long Term Loans}$$

This approach is known as the entity approach but for bank EVA, the computation goes differ. Author used the equity approach for calculating bank EVA as used by Parasuraman (1996) and Baheti (2001). Reason being the big part of banking business is liability management. Banks raise deposits at a cost lesser

than their opportunity cost of capital. In fact, these deposits allow the bank to create value for their owners. Thus, liabilities side of a bank is more operational in nature than financing. Thus, it is more appropriate to use equity approach.

### Step 1: Calculating NOPAT

At first, certain adjustment are necessary to convert the GAAPs based net earnings of a bank into net operating profit in order to remove the distortion. Stewart & Co. has identified more than 120 potential adjustments while working with his clients that a company may make to its net income. But in general, there are only ten adjustments necessary to yield appropriate values of EVA. Out of these, two are the most common adjustments for a bank to incorporate are its loan losses provision and tax provision.

Under GAAP, bank accounts for “write off” of a portion of individual loans by increasing loan loss reserve and report this in its balance sheet; similar amount is expensed as provision for loan losses in its income statement. Similarly, a bank’s provision for taxes calculated under GAAP may significantly be different from those of computed under applicable tax laws. But doing so just distorts the performance measurement of the bank for a given period. Thus, NOPAT<sup>2</sup> is computed using actual net charge for the related period rather than its estimated provision. This reflects only current period losses rather than anticipated future losses.

$$\text{NOPAT} = \text{EBIT} \cdot (1-t) + \text{R\&D Expenses} + \text{Training Expense} + (\text{Loan Loss Provisions} - \text{Net Charge off}) + (\text{Book Tax Provisions} - \text{Cash Operating Taxes}) + (\text{General Risk Provision} - \text{Net Charge off})$$

### Step 2: Calculating Cost of Equity

**Invested Capital.** Invested capital is sum of shareholders equity including reserves and surplus. This capital is used to determine charge against the economic profit.

**Cost of Equity.** The famous Capital Asset Pricing Model (CAPM<sup>3</sup>) is used for calculating cost of equity. The model is stated below:

$$k_e = R_f + \beta(R_m - R_f)$$

Where:

- a) **Cost of Equity ( $k_e$ )** is the minimum rate of return to be provided for projects financed with equity so that owners’ wealth could remain intact, at least.
- b) **Risk free rate ( $R_f$ )** is the rate at which government can raise debt. This study used average of SBP discount rates issued in a years.
- c) **Beta ( $\beta$ )** – commonly known as index of systematic risk, is the measure of volatility in a stock price in relation to the market price. Beta for each stock was calculated based on daily stock price prevailing at Karachi Stock Exchange. It is computed as:

$$\beta = \frac{\text{Cov}(R_i, R_M)}{\sigma^2 R_M}$$

- d) **Stock Return ( $R_i$ )** is the average of the daily returns of any particular stock. Daily prices for the sample stocks were collected from KSE. Further, opening and closing prices of sample stock were transformed into average daily price for a particular day taking into account the dividends announced during a particular year. Daily returns were calculated using the below formula and then these were annualized.

$$R_i = \left( \frac{(P_{it} - P_{it-1}) + DIV_t}{P_{it-1}} \right)$$

- e) **Market Returns ( $R_m$ )** is the average index return. Karachi stock Exchange was selected being the market leader in Pakistan to determine market returns. Further, KSE 100 Index was selected as the

<sup>2</sup> Net Operating Profit after Tax

<sup>3</sup>Originally developed by William Sharp in his article “Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. The article was published in 1964 issue of the *Journal of Finance*. On this work, Sharp was awarded Nobel Prize in 1990. Later, the assumption implied in the model were spelled out by Michael C. Jensen in “Capital Market: Theory and Evidence” in the *Bell Journal of Economics and Management Science* (1972).

country's representative index. Daily differences were computed as the difference between average daily index values of the two consecutive days and returns were determined as follows:

$$R_m = \left( \frac{Index_t - Index_{t-1}}{Index_{t-1}} \right)$$

f) **Market risk premium** ( $R_m - R_f$ ) is the excess return provided by market over risk free rate.

Average risk depicts an average stock's beta equal to 1, i.e.  $\beta_A = 1.0$

**Economic Value Added = NOPAT - Capital Charge (Invested Capital x COC)**

Economic profit is calculated by deducting capital charge from NOPAT. This capital charge is considered as a rental fee charged to company for using capital.

**4.3 Econometrics Model**

To investigate the relationship among the explained and explanatory variables, the famous model for panel data analysis is used as under:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \dots + \beta_k X_{kit} + \epsilon_{it}$$

Or for this study

$$MVA_{it} = \alpha + \beta_1(ROCE_{it}) + \beta_2(ROE_{it}) + \beta_3(EVA_{it}) + \beta_4(PE_{it}) + \beta_5(MB_{it}) + \mu_{it}$$

**5. RESULTS AND DISCUSSION**

**5.1 Tests to apply**

For estimation of the panel dataset, following sequence of tests is followed in subsections below:

**5.1.1 Hausman Test.** Hausman Test determines whether to select fixed or random effects model. The criteria of selection is by comparing probability value i.e. if *p*-value is up to 10%, then fixed effects model is better specification for panel data estimation and vice versa. Here the probability value of  $\chi^2$  is less than 0.0183 which implies significance of the test rejecting  $H_0$ . Thus fixed effects model is more suitable option.

**Table 1.** Hausman Test

Hausman Test: Choice between Fixed or Random Effects	
Hypothesis: $H_0$ : Difference in coefficients not systematic. $H_A$ : Difference in coefficients systematic.	
Value	Decision
pval> $\chi^2 = 0.0183$	Since p-val> $\chi^2$ > <b>0.05</b> as well as <b>0.01</b> fixed effects is preferred
STATA 12.0 xtreg and Hausman commands	

**5.1.2 Breusch and Pagan Lagrangian Multiplier Test.** This post-estimation test determines whether to select random effects regression or a simple OLS regression. The null hypothesis in the LM test is that variances across banks are zero or no panel effect exists. Here the significance of  $\chi^2$  indicates the presence of panel (fixed or random) effects.

**Table 2.** Breusch-Pagan Lagrange Multiplier (LM) Test

Breusch-Pagan LM Test		
Variable	Var.	SD = SQRT (VAR)
MVA	0.01176	0.10844
E	0.00149	0.04364
U	0.00149	0.03865
Test: Var (u) = 0		
chibar2(01)		21.29
Prob> chibar2		0.000
Estimated using STATA 12.0 xttest0 command		

**5.1.3 Test for Serial Correlation.** Serial correlation is usually not expected in case of micro panels (with years less than 20). Technically, serial correlation renders standard errors of coefficients smaller than their actual values and inflates  $R^2$ . This paper deals with micro panel data ( $t = 5 > 20$ ). But the author has

applied the test and it can be inferred from the table that there is serial correlation among residuals. Consequently, OLS coefficients are likely to be biased, inconsistent and inefficient.

**Table 3.** Wooldridge Test for Serial Correlation in FE Regression Model

Wooldridge Test	
<b>H<sub>0</sub>: no first order autocorrelation</b>	
F(1, 14)	50.978
Prob> F	0.0000
Estimated using STATA 12.0 xtserial command	

**5.1.4 Diagnostic Tests for detecting heterogeneity.** Modified Wald test is applied to find the existence of heteroskedasticity. *Technically speaking, “Error term  $\varepsilon$  is termed as heteroskedastic if variance of the conditional distribution of  $\varepsilon_i$  given  $X_i$  [ $\text{var}(\varepsilon_i|X_i)$ ] is non-constant for  $i = 1, 2, \dots, n$ , and specifically doesn't depend on  $X_i$ ; else,  $\varepsilon$  is homoscedastic.”* Heteroskedasticity may lead to wrong estimates of standard errors for coefficients and hence of their t-values. While the estimates of OLS might not be biased in this case, standard errors do become wrong.

**Table 4.** Heteroskedasticity in Fixed Effects Regression

Heteroskedasticity in Fixed Effects Regression	
<b>Modified Wald Test</b>	
<b>H<sub>0</sub>: <math>\sigma_i^2 = \sigma^2</math> for all i</b>	
$\chi^2$	22125.65
Prob > $\chi^2$	0.0000
Estimated using STATA 12.0 xttest3 command	

**5.1.5 Fixed Effects Estimation with OLS and Driscoll and Kraay standard errors.** Results of Wooldridge test for serial correlation and Modified Wald test for group-wise Heteroskedasticity call for the fixed effects regression with Driscoll and Kraay standard errors (S.E) as in column II table 5. A cross-sectional analysis was carried out through FE model on sample banks to determine the impact of the independent variables on the dependent variable. Table 5 shows results of this cross sectional analysis The following Table – 5 shows FE estimation results for the econometric model developed in Eq. (2).

**Table 5.** Regression Model Estimations

Regression Model Estimations				
Dependent Variable is Market Value Added (MVA)				
Regressors	I		II	
	Fixed Effects Estimation (Ordinary Least Square, OLS)		Fixed Effects Estimation with Driscoll and Kraay standard errors	
	Coefficient	p-value	Coefficient	p-value
EVA	0.14053 (0.71)	0.4810	0.70749 (9.66)	0.001
ROE	0.091 (3.75)	0.000	0.121 (9.17)	0.001
ROCE	0.122 (0.37)	0.715	0.659 (2.16)	0.097
PE	0.008 (1.11)	0.273	0.007 (4.35)	0.012
MB	0.070 (4.10)	0.000	0.094 (8.67)	0.001
C	-0.092 (-2.38)	0.021	-0.132 (-9.34)	0.001
	R <sup>2</sup>	0.612	R <sup>2</sup>	0.678
	Adjusted R <sup>2</sup>		Adjusted R <sup>2</sup>	N/S
	F(14, 55)	6.58	F (5, 4)	49581.47
	p-val> F	0.000	p-val> $\chi^2$	0.0000

R<sup>2</sup> These results reveal that EVA (*t-statistics* = 9.66), ROE (*t-statistics* = 9.17), PE (*t-statistics* = 4.35), and MB (*t-statistics* = 8.67) are statistically significant at 1% level of significance, whereas, ROCE (*t-statistics* = 2.16) is significant at 10% level.

With reference to explanatory power of the independent variables in explaining variations in MVA, these results further show that a 1 unit change in EVA, ROE, ROCE, PE, & MB will bring on average 0.7074 unit, 0.1209 unit, 0.6587 unit, 0.008 unit, and 0.0937 unit change in MVA respectively.  $R^2$  is reasonable and overall model is also significant as per significance of chi-statistic in Wald test.

The error structure was supposed to be heteroskedastic, autocorrelated up to some lag and possibly correlated. This technique of fixed Driscoll and Kraay standard errors has been applied by Mehmood, Shahid & Ahsen (2013) and Mehmood & Mustafa (2014). Estimations in this paper reveal no upsetting change as compared to results of fixed effects estimates. Only t-ratios have marginally changed due to new Driscoll and Kraay standard errors causing negligible change in p-values but none in statistical significance.

## **6. CONCLUSION, LIMITATIONS AND RECOMMENDATIONS**

### **6.1 Conclusion**

The motivation behind the study was the lack of empirical literature available for Pakistani banking environment. We examined the set of traditional performance measures, from 2009 to 2013 using fixed effects regression with Driscoll and Kraay standard errors (S.E) comparing MVA with EVA and traditional measures of performance. Stern claimed that EVA has a higher explanatory power taking into consideration the Market Value Added. In our study, the results support this statement, since EVA displayed a highly significant correlation with MVA. From this study, a conclusion can be drawn that EVA is applicable in Pakistani banking industry with some suitable adjustments. Pakistani banks need to enhance EVA for their shareholders, which is only possible by controlling their cost of capital. The literature also showed that EVA and MVA are closely related. Our analysis confirms the association between these two indicators and shows a statistically significant relationship between EVA and MVA in the time period studied. This is in line with many previous studies like Stern (1991) for US companies, Uyemura, Kantor and Petit (1996) for 100 U.S Bank holding companies, and Verma (2000) for Indian Banks.

Positive earnings do not entail value addition positively. It was also observed during the analysis that a bank reporting positive earnings cannot always ensure value addition. In this regards, the shareholders also need to be aware of the value created by the firms' management. Firms having higher EVA ensure long-run profits to the shareholders on their provided capital. Though bearing certain limitations therein, EVA still stands as an improvement over conventional performance measures such as ROE, MB, ROCE, and PE Ratio etc. If EVA phenomenon is applied while considering its limitations into account, it may yield better results to determine and analyze managerial performance.

### **6.2 Limitations of the study**

This study covers the period from 2009 to 2013. A few limitations encountered during this study are:

- i. This study takes into account minimal accounting adjustments while computing EVA, whereas a total of over 160 accounting adjustments exist for the calculation of EVA. Most of those are specific to the clients of Stewart. Thus, to determine the reflection of EVA on MVA, a large-scale research can take into account those untouched accounting adjustments.
- ii. This study covers only 5 years period, which represents a complete business cycle. But, a longer period can better express the empirical results. So, for future studies, intended period may be long enough (Pasaribu, 2008).
- iii. Relatively small sample size of only 15 banks can be unrepresentative and not handy to overall corporate sector in Pakistan.
- iv. The accounting data used in this study as secondary data has been taken from the audited published annual reports of the sample banks. The quality and reliability of accounting data has its own inherent limitations due to changing accounting standards, which we need to accept without further query therein.
- v. The serious limitation in this study is lack of samples due to the problem of data availability and negative profitability identified in the listed banks.
- vi. There are abnormal changes in the market returns especially for KSE, due to which the results cannot be generalized.

### 6.3 Recommendations for future EVA studies

This study may be taken as a first puck on the ice at the beginning of a very long game. In this regard, following are some recommendation for future EVA studies:

- i. In future studies, the scholars may use value based measures such as Created Shareholders Value, Cash Value Added, Cash Flow Return on Investment, and Refined EVA as independent variables. For dependent variables, Market Adjusted returns may be used.
- ii. Future scholars can use EVA as a valuation model in their research.
- iii. A longer period can better express the empirical results. So, for future studies, intended period may be long enough (Pasaribu, 2008).
- iv. As the study is on cross-sectional analysis, thus, a time series study is suggested to understand the relationship between EVA and MVA.
- v. A new EVA research may be conducted for determining variables from management accounting like balanced scorecard in order to determine its value relevance from firm's point of view.
- vi. The EVA model discussed in this study and previous literature can be applied in performance measurement, project analysis, and value management.
- vii. This study does not differentiate banks on the basis of their ownership structure. In future, study may take into account this variable on the basis of public, private or government entities.
- viii. Future researchers are suggested to cover a longer timeframe of observation in order to test EVA's sustainability over time in order to minimize variations in certain variables like beta, capital invested and the share prices.
- ix. To calculate cost of equity, other methods like Arbitrage Pricing Theory may be used.

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