

Economic Value - Accounting Value Nexus: –The Effect of Accounting Measures on Economic Value Added Amongst the Kenyan Commercial Banks

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Abstract

The study is an empirical investigation on the relationship between Economic Value and Accounting Value among commercial banks in Kenya as a basis of company value. Accounting information has always been critical to investors. However economic value added has gained prominence as an appropriate approach to company value. This study is based on a survey research which entailed a target population of 43 commercial banks in Kenya with a sample population of 30 commercial banks. Secondary data used was obtained from published reports of the Nairobi Securities Exchange (NSE), Central Bank of Kenya (CBK) and published financial statements of the sampled commercial banks. The period of study was between 2008 and 2012 with 150 observations. A regression analysis was used to explore the relationship between the Economic Value and the Accounting Value measures for the Kenyan commercial banks. The econometric results reveal that both Return on Assets and Earnings per Share have a significant positive relationship on Economic Value. On the other hand, the findings show an inverse relationship between Returns on Equity and Economic Value. There is however positive correlation amongst the accounting value measures with an exception of Return on Equity and Earning per Share which illustrate negative correlation between them. The study results therefore suggest that as Kenyan commercial banks consider accounting value measures as a basis of their worth, it is critical that they embrace economic value measurement criteria with a critical examination of corporate governance issues which should take cognizance of the best international practices given that it has a bearing on the management of critical macroeconomic parameters that affect company performance.

Keywords: *Economic value, Accounting value, and Commercial Banks.*

1. Introduction

The International Accounting Standards Board (1989) identifies the prime objective of financial statements as that which provides information about the financial position and performance of an enterprise, which is useful information to various investors in making investment decisions. High quality accounting information is a necessity for well-functioning capital markets and the economy as a whole. Hence, it should be of considerable importance to investors. A basic attribute of accounting quality is value relevance which implies the relevance of accounting information for equity valuation. According to Francis et al (2004), value relevance seems to be more important to investors than any other consideration. Francis and chipper (1999), identifies four approaches to studying the value relevance of accounting information. They are: the fundamental analysis view, the prediction view, the information view, and the measurement view of value relevance. For the purpose of this paper, the measurement view of value relevance is adopted. Indeed, under the measurement view of value relevance, accounting figures are value relevant if they capture or summarize information that affects stock prices (Francis and Schipper, 1999). Effectively, financial statements do not have to be used by investors per se; but what is important is their ability to summarize the information which affects stock prices and hence renders them relevant in equity valuation (Nilsson, 2003). Enterprise earnings also summarize important economic events that have taken place during the year, as well as decisions made by management. The earnings therefore serve as an aggregate measure of company performance.

Overtime, Kenya's commercial banking sector has witnessed significant growth in terms of the players and the asset base. This is significantly so as banks are both publicly quoted at the Nairobi stock exchange (NSE) while some are non-quoted. This sector growth phenomena has however to be examined within the perspective of their specific attraction to investors. However, the commonly used criterion of valuing company performance is based on the traditional accounting standards as opposed to examining the value based criteria involving economic value as well. In evaluating performance with the traditional method, only accounting profits are often considered without considering the costs of providing the company's capital resources. This approach is obviously not desirable.

Given that most of the Kenya commercial banks are not publicly quoted in the securities market and there is significant interest from potential investors, it is important to explore the relationship of the basic and popularly used accounting measures of company value and economic value added. Consequently, the objective of this study was to determine the relationship between the economic value and accounting value measures of company performance in Kenyan commercial banking sector. The study in achieving this objective

examined the impact of three accounting measures (Return on Equity, Return on Assets and Earning per Share) on the economic value in the industry.

1.1 Organization of the Study

This study is organized in six sections. Section one deals with the foregoing introduction which includes the study objective. Section two is the literature review and study setting. Section three provides the study methodology which includes research design; population sample; and model specification. Section four provides data analysis while section five provides the results from the data analysis with section five giving the study results. The study discussions and conclusions are in section six.

2. Literature Review

Kenya's banking sector is quite dynamic in terms of product development and credit delivery. In trying to facilitate the process of economic development, the commercial banks have to maintain the statutory capital reserve requirements which are mainly contributed by the stakeholders. Therefore, the capitalization level of the banks like any other company involved in trading defines its value in terms of trading volume and subsequent profitability. Potential investors in companies are likely attracted by the level of expected returns for the investments. This implies that for companies to operate profitably, they should be appropriately capitalized. Company's absolute value as perceived by the investor takes cognizance of its total market value as opposed to considering the basic accounting values relating to Return on Equity (ROE), Return on Assets (ROA) and Earning Per Share (EPS).

It is important to appreciate that accounting information for an enterprise encompasses measurement of Returns on Equity, Return on Assets and Earnings per Share held by an investor. Economic Value Added (EVA) is an estimate of true economic profit after making corrective adjustments to Generally Accepted Accounting Principles (GAAP), including deducting the opportunity cost of equity capital. Economic Value Added basically seeks measure efficiency of an enterprise in value creation (Shaked and Leroy, 1997). Management should focus on maximizing Economic Value Added which measures the intrinsic market value of an enterprise (Stewart III, G.B 1991).

Economic Value Added is considered a better measure of a company's performance as it considers both endogenous and exogenous factors which may affect enterprise performance and not only accounts for the cost of capital, but also considers several corrective adjustments which includes deducting the opportunity cost of equity capital which then gives describes the economic value added formulas given below;

$$EVA = ANOPAT - (C * x CAPITAL EMPLOYED)$$

Where,

EVA = Economic Value Added

ANOPAT = Adjusted Net Operating Profit After Taxes

C* = weighted average cost of capital - including debt & equity

The main argument for the application of EVA is that accounting earnings value excludes any costs associated with equity. EVA addresses this weakness and includes more complete information about company performance and should therefore be more closely associated with value as interpreted by the market. It is essentially critical for investors to set a basis for measuring enterprise operational status and performance. This approach once used by prospective investors, is likely to result to prudent management of enterprises, in terms of managing endogenous and exogenous variables affecting performance.

Considering the theory of economic value¹, the assumption behind the measurement view of value relevance is that the information disclosed in financial statements relates to company value² by capturing information that affects stock prices (Francis and Schipper, 1999). This essentially refers to economic variables and conditions in an economic environment. Economic value³ concept is consistent with the discounted cash flow model, which states that the value of an asset equals all future cash flows discounted to present value.

Accounting value⁴ information is often assumed to be the basis of investors' beliefs and expectations about the company's market value. Obviously accounting value is the result of a measurement procedure that corresponds to accounting regulations and laws. Runsten (1998) states that accounting as a process rightly generates a description of a firm in an attempt to measure and describe its financial position and performance and the output from the accounting procedure is often used as input in the pricing procedure of the Company's stocks.

The principle objective of accounting process is to provide information about the financial position and performance of companies (IASB, 1989), as well as the value relevance of accounting information. If accounting results from the process provides a poor description of the company, the value of its stock is likely to be low. EVA used as a performance measure stimulates managers to employ a firm's assets more productively and it assists in reducing

¹The theory states that the value of an asset for its owner is the discounted value of all future cash flows which the owner expects to receive as a consequence of the possession and decisions regarding the asset's use (Runsten, 1998).

²This is defined as the total value of a company's stock and accounting figures. However, it is relevant if it captures or summarizes information on what affects the value of a company's stock.

³Economic value as explained by Runsten (1998) is that value of any asset which relates to future cash flows that can be gained from the asset.

⁴Accounting value on the other hand refers to the book value of equity as presented in the company's balance sheet statement.

differences in the interests of the managers and shareholders (Irala, 2005). This could lead to one concluding that EVA based incentive plans could prove effective in directing and motivating managers for shareholders wealth creation. The fundamental assumption of shareholder value is that a business is worth the net present value of its future cash flows over a defined timeframe, discounted by the cost of capital appropriate for the business (Clarke, 2000).

A number of other scholars believe that making financial decisions based only on accounting data may affect a company value (Stewart, 1991) but it should be noted that there are other macroeconomic variables which are equally critical in company value assessment. Therefore, Economic Value (EV) is a useful financial approach which measures value based on adjusted accounting data taking into consideration the critical macroeconomic variables such as inflation and corporate management issue among others so to assess the overall performance and enables a company grow (Stewart, 1991). It seeks to improve and measure efficiency and value creation of companies (Shaked and Leroy, 1997) which is a comprehensive approach.

Therefore, Economic value added can be regarded as one of the new techniques that reflect the true value of companies and does not include the drawbacks of the previous performance evaluating criteria based on accounting income.

Indeed, given the fact that performance of enterprises has to be examined in totality, the relationship and measure between economic value and accounting value is of great interest (Nilsson, 2003). Basically, accounting information captures and summarizes events that have affected a firm over the reporting period. It should be noted that if an accounting value represents a relatively true position of market dynamics, then indeed the accounting process captures appropriate information that would be used by market participants to determine the stock prices or returns. Essentially the accounting parameters of measuring company value are limited while the economic value approach encompasses a number of other variables which include those that are considered by the accounting value approach.

Given this perspective and that the existing investors in a stock market have special interest in the true value of companies they are interested in, then both economic value and accounting value measures are essential in company valuation, and not only accounting measures. Indeed, investors largely consider accounting measures to economic value companies, an approach which does not entirely reflect the true value of such companies. Effectively, a study by Merchant and Sandino (2009) investigated the usefulness of EVA approach to company valuation in a dynamic market environment. Economic value added is an appropriate approach to the measurement of a company's worth as it is innovative in terms of the prevailing macroeconomic environment unlike the traditional accounting criteria

involving measures such as Return on Equity (ROE), Return on Assets (ROA) and Earning Per Share (EPS).

Within the banking industry, accounting measures have largely been used especially for statutory reporting purposes. However, such measures often result in violation of regulatory capital requirements, reduce lending and effectively cause banks to sell off assets in order to maintain adequate capital requirements. Given the operational dynamics of the banking sector in terms of the products offered and the mode of delivery, it is critical that the relationship between the economic value as a measure of bank performance and the accounting value is understood.

Literature indeed does show that there are a number of studies focussing on economic value and accounting value within the banking industry and yet fairly little has been done on the Kenya banking sector. Consequently, it is essential to examine the relationship between Economic value and traditional performance criteria based on accounting value measurement approach for the Kenya banking industry within the progressive changing operational environment.

2.1 Study setting

Kenya's financial system comprises of financial institutions, financial markets, and infrastructure arrangements involving clearing and settlement systems. This paper focuses on financial institutions, specifically commercial banks⁵ in Kenya. Commercial banks play a dynamic role in the economic development process of a country through the mobilization of financial resources and allocation of credit to productive sectors. There is significant interest by the various investors on this sector. The banking sector in Kenya comprises of the Central Bank of Kenya, as the regulatory authority; Commercial Banks; Non-Bank Financial Institutions; Foreign Exchange Bureaus and Deposit Taking Microfinance Institutions as the regulated entities. As at 31st December 2012, the banking sector comprised of 46 institutions, 43 of which were commercial banks and 2 mortgage finance companies and 1 development finance institution. Commercial Banks and Mortgage Finance Companies are licensed and regulated under the Banking Act, Cap 488 and the issued Prudential Guidelines. Deposit Taking Microfinance Institutions on the other hand are licensed and regulated under the Microfinance Act and the issued regulations. Foreign Exchange Bureaus are licensed and regulated under the Central Bank of Kenya Act, Cap 491 and issued Foreign Exchange

⁵Commercial banks: Accept deposits, Lend money, Process payments, Issue bank drafts and checks and Offer safety deposit boxes for items and documents. Also they may offer other services such as brokering insurance contracts, giving investment advice and so on. They also provide a wide variety of loans and offer other credit vehicles like cards and overdrafts.

Bureau Guidelines. Out of the 46 institutions, 33 were locally owned and 13 were foreign owned. These institutions have continued to play a critical role in the country's economic development process. However, the players in this sector have experienced increased competition over the last few years resulting from increased innovations amongst themselves and new entrants into the market. Effective operation of these institutions have also been facilitated by existing regulatory policies which promote competition, well-developed financial system, effects of branch networks and the uptake of technological advancements. Indeed the experienced dynamism in the Kenyan banking sector is expected to continue as banks seek new opportunities in the face of an anticipated subdued risk appetite.

3. Study Methodology

The study adopted the following methodology

3.1. Research Design

The study used sample survey research design, which explores the existing status of two or more variables at a given point in time. Cooper and Schindler (2000) states that the sample size is the selected element or subset of the population that is to be studied to ensure that the sample accurately represents the population. Sampling is a deliberate choice of a number of participants who are to provide the data from which one draws conclusions about some larger group, whom these participants, represent (Cooper and Schindler, 2000). This study used stratified random sampling technique to select the sample from the Kenyan Commercial banks. The technique produced estimates of the overall population perspective within the Kenyan commercial banking sector with greater precision. This study therefore, was carried out to establish the relationship between economic value and accounting value among commercial banks in Kenya as a basis for company valuation. This design was suitable for this study since through data collection and analysis, conclusions were drawn based on the findings.

3.2. Study Population, Sample size and data collection and analysis

The population for this study consisted of all the 43 commercial banks in Kenya, with a sample population size of 30 commercial banks representing 69.8% of the population which is quite high representation. The study utilized secondary data that was obtained from Nairobi stock exchange, CBK publications and published financial statements for banks for a period of 5 years (2008-2012) and other relevant publications. It should be noted however that the study period covers the year 2008 when the global financial crisis struck the world. This crisis did affect the profitability of the local banking sector but this effect does not affect the analytical perspective of the research in terms of the principal objective of examining the relationship of two company performance tool. The study examined 5 years which is

considered enough period for Value relevance studies which is also in conformity with recommendations given by Easton et al. (1992), who indicate that a period of five years is able to considerably explain stock returns. Data analysis for the study resulted to logical deductions and inferences about the study objective. The study also utilized an econometric analysis as a basic tool of data analysis, which involved a logarithmic⁶ regression model in which the test of statistical significance⁷ was conducted along with other measures of association.

3.3. Model and model Specification.

The study objective in terms of the relationship among the variables was estimated using the following function:

$$y = e^{AV + \varepsilon_t} \quad (1)$$

Where y is expected Economic Value and AV is the vector of factors / Accounting Value⁸ as measured as specified in equation (2) and ε_t is the error term.

The study used a logarithmic regression to predict the extent to which the identified independent variables affect the dependent variable and STATA version 12 was used in regression⁹ analysis and computation of coefficients. Therefore the regression equation used for estimation takes a transformation of equation (1) as specified hereunder:

$$y = e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon_t} \quad (2)$$

Where y = Economic Value

⁶Economic relationships are not always linear. In the econometrics literature, non-linear relationships can be modelled using: Quadratic transformations, Taking logs, Dummy regressions or Interaction variables (Yoon, 2013).

⁷It is recommended that one MUST always use measures of association along with tests for statistical significance. The latter estimates the probability that the relationship exists, while the former estimate the strength (and sometimes the direction) of the relationship. Each has its use, and they are best when used together.

⁸ Accounting value (AV) is measured and determined by factors such as Return on Equity, Return on Assets and Earnings Per Share.

⁹Regression analysis is widely used to predict and to forecast as well as understanding which among the independent variables are related to the dependent variable, and to explore the forms of these relationships. In restricted circumstances, regression analysis can be used to infer causal relationships between the independent and dependent variables. However this can lead to illusions or false relationships, so caution is advisable (correlation does not imply causation).

X_1 =Return On Equity

X_2 =Return on Assets

X_3 = Earnings per Share

ϵ_t = represents the standard error.

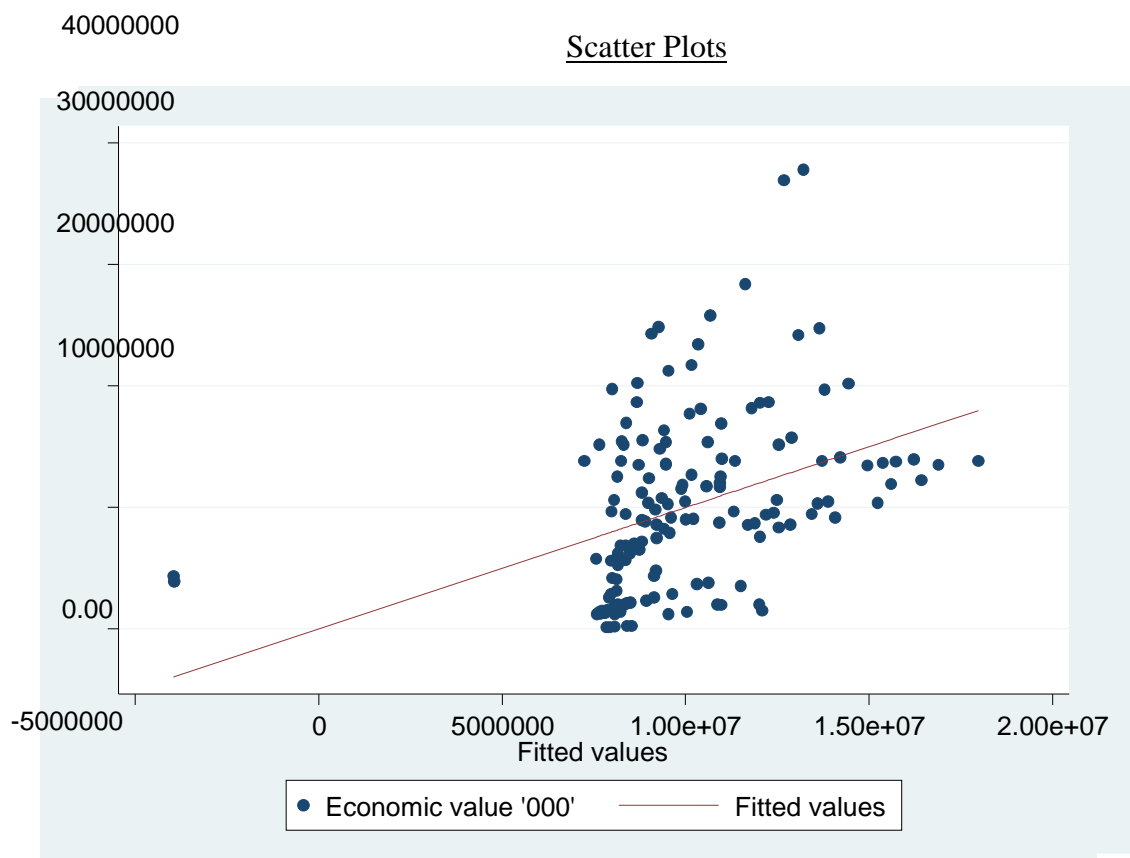
By transforming the exponential equation (2) to a logarithmic functional form implies that the model of estimation for this study is as follows;

$$\log y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon_t \quad (3)$$

Where again y is the Economic Value of commercial banks, X_1 is Return on Equity, X_2 is Return on Assets, and X_3 is the Earnings per Share while ϵ_t represents the standard error which is a proxy for all omitted variables that affect Economic Value of commercial banks.

The log- linear model was used since general linear regression model was not appropriate since as shown below the scatter plots were found not to be symmetrically distributed along the 45 degree line. This was an indication of non-linearity between the dependent variable and the explanatory variables which is contrary to what OLS assumes as shown in figure 1 below:

Figure 1: Scatter Plots



Source: Author's calculations.

Further it was established that OLS failed to demonstrate normality as shown in table1 below. Violations of normality often arise either because, the distributions of the dependent and/or independent variables are themselves significantly non-normal or the linearity assumption is violated and in other words, the linearity of the coefficient of the parameters.

Obviously violations of normality compromise the estimation of coefficients and the calculation of confidence intervals. Sometimes the error distribution is "skewed" by the presence of a few large outliers. Since parameter estimation is based on the minimization of squared error term, a few extreme observations can exert a disproportionate influence on parameter estimates. Calculation of confidence intervals and various significance tests for coefficients are all based on the assumptions of normally distributed errors. If the error distribution is significantly non-normal, confidence intervals may be too wide or too narrow. In such cases, a non-linear transformation of variables largely addresses both problems relating to normality and distribution. In this case, the null hypothesis of normality of residuals was rejected since p value was less than 0.05.

Table1: Shapiro-Wilk W test for normal data

Variable	Observations	W	V	z	Prob>z
Residuals	150	0.91883	9.444	5.090	0.00000

Source: Author's calculations.

Therefore, since linearity and normality assumptions appeared to have been violated, then OLS method of application was deemed not appropriate for estimation purposes. We therefore used the log- linear functional form which does not make such assumptions.

4. Data Analysis

4.1. Summary of Descriptive Statistics

From the data of the 30 commercial banks sampled in this study, it can be noted that on average, Economic Value was generally on the rise for the five year period and was similarly accompanied by a rise in explanatory variables i.e. Return on Equity (ROE), Return on Assets (ROA) and Earning Per Share (EPS) respectively. From the findings, there was a significant rise in the mean scores for Return on equity from 17.7% in 2008 to 22.44% in 2010 while in the preceding year it fell to 22.32% and rose again to 22.6 in 2012. In addition, from Figure 2 below, the differences in standard deviations over the study period is an indication that the accounting values for the respective banks has systematic variations which have been increasing over time for the sampled banks. However, it is observed that Return on Assets and Earnings per Share do not show wide variations as the return on equity which may be attributed to the various capitalization levels for the banks.

Further, there is a consistent rise in the mean values for the Earnings per Share from 2.2 in 2008 to 3.8 in 2012. However, a recorded high standard deviation in 2012 depicts variation in Earnings per Share, which is an indication of variation in share prices for the sampled banks.

Finally from the findings, the Economic Values as illustrated in Figure 3 below show a consistent increase from Ksh7.6 billion in 2008 to Ksh12.3 billion in 2012, implying that a rise in the values of Return on Equity, Return on Assets and EPS had significant influence on Economic Values for the Kenyan commercial banks.

Table 2: Annual Averages

Year	Return on Equity (%)	Return on Assets (%)	EPS (Kshs)	Economic Value (Billion)
2008	17.7014	2.6926	2.2717	7.6830
2009	17.8624	2.3501	2.2805	8.4513
2010	22.4459	3.2199	2.6164	9.2965
2011	22.3267	3.9556	3.2165	12.0854
2012	22.6042	4.5570	3.8450	12.3798

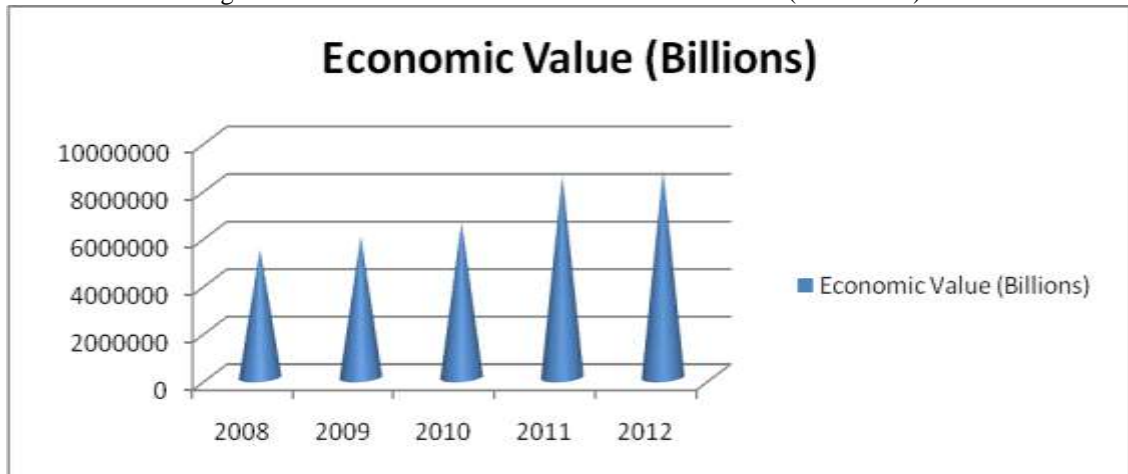
Source: Banks' Annual Reports

Figure 2: Standard Deviations for ROE, ROA and EPS (2008-2012)



Source: Author's calculations.

Figure 3: Standard Deviations for the Economic Value (2008-2012)



Source: Author's calculations.

4.2. Correlation Analysis

To quantify the strength of the relationship between the variables, the study carried out Karl Pearson's coefficient¹⁰ of correlation with results as presented in Table 3 below.

The results as presented in table 3 reveal that there is significant positive relationship between Return on Equity, Return on Assets, Earnings per Share and Economic Value ($r = 0.1701$, $r = 0.3844$ and $r = 0.0421$), an indication that being measures of Accounting Value, the variables positively influence Economic Value of the Kenyan commercial banks.

Among the independent variables, the same set of results illustrates a scenario which indicates that there was positive relationship between Return on Equity and Return on Assets ($r = 0.5652$) and a negative relationship was noted between Return on Equity and Earning per share ($r = -0.0427$) while Return on Assets maintained a positive relationship with earnings per share ($r = 0.0436$).

Table 3: Pearson's Correlation Coefficient Matrix

	EV	ROE	ROA	EPS
EV	1			
ROE	0.1701	1		
ROA	0.3844	0.5652	1	
EPS	0.0421	-0.0427	0.0436	1

Source: Author's calculations.

¹⁰The Pearson product-moment correlation coefficient is a measure of the strength of a linear association between two variables and is denoted by r . The Pearson correlation coefficient, r , can take a range of values from +1 to -1. If $r=0$ there is no association between the two variables. A value >0 indicates a positive association, that is, as the value of one variable increases so does the value of the other variable. And a value $r < 0$, indicates a negative association, that is, as the value of one variable increases the value of the other variable decreases.

But it should be noted that none of the correlations between them is particularly high i.e. above |0.6|. This implies that the problem associated with multicollinearity does not arise in the model estimation process. This was confirmed by VIF Table 4 results shown below;

Table 4: Variance Inflation Factors.

Variable	VIF	1/VIF
ROE	1.48	0.675986
ROA	1.48	0.675933
EPS	1.01	0.991450
Mean VIF	1.32	

Source: Author's calculations.

Indeed, variance inflation factors confirms the non- existence of high correlation between the independent variables, taking note of the fact that if VIFs > 10 or 1/VIF<0.10, then serious Multicollinearity exists which is not the case for this study.

4.3 Analysis of Variance (ANOVA)

From table 5 below, the coefficient of determination, which is the percentage variation in the dependent variable being explained by the changes in the independent variables, was given by R² of 0.1846 with an adjusted R² of 0.1678. This means that Return on Equity, Return on Assets and Earnings per Share explain 18.46 percent of the total variation in Economic Value as a dependent variable. However, note that often a high R-squared¹¹ does not mean that regression is any good (nor does a low R-squared mean that the regression results are spurious).

Table 5: ANOVA

Source	SS	df	MS	Number of obs	=	150
				F(3, 146)	=	11.02
Model	33.4483424	3	11.1494475	Prob> F	=	0.0000
Residual	147.768297	146	1.01211163	R-squared	=	0.1846
				Adj R-squared	=	0.1678
Total	181.21664	149	1.21621906	Root MSE	=	1.006

Source: Author's Calculations

ANOVA¹²is critical in the understanding of the relevance of explanatory variables in the estimation process. The statistic for testing the hypothesis that all $\beta \neq 0$ against the null hypothesis that $\beta = 0$ (Weisberg, 2005) was considered. The comparison between the p value of 0.000 against the level of significance of $\alpha=0.05$ indicates that all the predictor variables

¹¹R² is just a scalar value which usually cannot be used as a benchmark to inform on the fitness of the model.

¹² Analysis of Variance (ANOVA) consists of calculations that provide information about the degree of variability of the predictor variables as they explain the dependent variable.

(Return on Equity, Return on Assets and Earnings per share) are significant in explaining the Economic Value for the Kenyan Commercial Banks. Consequently, there are no major variations among the predictor variables in the estimation process.

Other descriptive statistics of the research variables which are observed include standard deviation, minimum, maximum and other indexes of variables described as presented in Table 6 below. All of the accounting values incorporated zero in their respective ranges but maintained the positive means. However, Return on Equity and Economic Value shows a large deviation compared to other accounting values given their wide ranges. We note that Economic Value has positive range implying that future cash flows for banks are expected to be positive.

Table 6: Other descriptive statistics on each observation (2008-2012)

Variable	Obs	Mean	Std. Dev.	Min	Max
EV~000	150	9979193	7292735	136650	3.78e+07
ROE	150	20.58812	11.48084	-56.68	41.74271
ROA	150	3.355029	3.141777	-11.63445	11.75784
EPS	150	2.846026	3.046812	-6.17	17.44

Source: Author's calculation.

5. Econometric results

Models generally rest on assumptions about the way the domain works, and regression models are no exception. If any of the regression assumptions are violated (i.e., if there is nonlinearity, heteroscedasticity, and/or non-normality), then the forecasts, confidence intervals, and economic interpretations yielded by a regression model may be inefficient / seriously biased or misleading. Therefore, it was necessary to conduct various tests before settling on the kind of regression model to use.

Tests were carried out to confirm non-constant variances of which its presence renders the usual t-test and F-tests invalid due to higher probability of type two errors. The study employed Breusch-Pagan test for heteroscedasticity with fitted values of economic value and found out that the P- value of 0.5329 is greater than the significance level of 0.05 as shown in table 7 below;

Table 7: Breusch-Pagan / Cook-Weisberg test for heteroscedasticity

Ho: Constant variance
Variables: fitted values of economic value
chi2(1) = 0.39
Prob > chi2 = 0.5329

H₀: Homoscedasticity

Source: Author's calculations.

This test implies that there is a constant variance amongst the variables which allowed us to adopt the model.

Effectively it was also necessary to measure magnitude of the relationship between the predictor variables of the model as shown by Table 8 below.

Table 8: Econometric Results (2008-2012).

LogEV	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
EPS	.0487783	.0271669	1.80	0.075	-.0049129	.1024695
ROA	.1687472	.0319076	5.29	0.000	.1056868	.2318076
ROE	-.0236117	.0087313	-2.70	0.008	-.0408677	-
_cons	15.49404	.1885292	82.18	0.000	15.12144	15.86663

Source: Author's calculations.

Estimated model is as follows:

$$\text{LogEV} = 15.49404 - 0.0236117\text{ROE} + 0.1687472\text{ROA} + 0.0487783\text{EPS}$$

From this model, β_0 is the y-intercept at 15.49404 when all other factors are set at zero. The results show that for a unit change in Return on Equity, economic value reduces by 2.34% holding returns on assets and earnings per share constant and for a unit change in Return on Assets, economic value increases by 16.87% holding return on equity and earnings per share constant. On the other hand a unit change in Earnings per share leads to an increase in economic value by 4.88% holding Return on Assets and return on equity constant. The regression analysis thus does reveal the extent to which Return on Equity, Return on Assets and Earnings per Share predict the Economic Value for Commercial banks in Kenya.

5.1 Test of the statistical significance¹³ of the estimated parameters at 5% significance level

Considering the hypothesis testing condition¹⁴ and the significance level of 0.05 against the p-values, it was revealed that the p values of 0.008 and 0.000 from Table 8 above are less than the significance level of 0.05 and therefore we reject the null hypotheses implying that there is no significant linear relationship between Return on Equity and economic value and between Return on Assets and Economic value respectively. On the other hand, that there is no linear statistical significance between Earnings per Share and Economic Value since the significance level of 0.05 is less than the p-value of 0.075. Therefore, from the test of

¹³Tests for statistical significance are used to estimate the probability that a relationship observed in the data occurred only by chance; the probability that the variables are really unrelated in the population.

¹⁴If the p value is less than or equal to significance level of 0.05, we reject null hypothesis and the p value is said to be "significant". Also if the p value is greater than significant level, we do not reject the null hypothesis and thus the p value is said to be "not significant".

statistical significance, it implies that apart from Earnings per Share, the other accounting values (Return on Assets and Return on Equity) are important determinants of Economic Value which is true for the Kenyan commercial banks given the fact that assets are the most critical ingredients in bank performance. On model specification, we applied Ramsey Reset test using powers of the fitted values of log of Economic value in estimating the omitted variables and established that the p-value of 0.0000 is less than the chosen significance level of 0.05 as shown by table 9 below,

Table 9: Ramsey reset test for variable omission

RamseyRESET test using powers of the fitted values of the Natural logarithm of Economic value
H_0 : The model has no omitted variables
$F(3, 143) = 10.26$
Prob > F = 0.0000

Source: Author's calculations.

This effectively confirmed the evidence of omitted variable(s) which is an obvious truth since there are several other factors which affect the economic value of banks which are both endogenous and exogenous.

6. Discussions and Conclusion

Company performance appraisal is one of the most important issues considered by stockholders, creditors, financial system regulatory authorities and fund managers in the development of capital markets, (Seyed, 2012). Accounting value is a practical tool which induces a firm to use its capital as efficiently as possible, and hence enhance the value of a firm. Management incentives which are based upon accounting value will only increase as the value of the firm increases. However maximizing shareholders value has become a new corporate paradigm in modern times. Shareholder's wealth is measured in terms of returns they receive on their investments. It can either be in form of dividends or in the form of capital appreciation or both. Capital appreciation depends on the changes in the market value of the stocks. The market value of stocks depends upon a number of factors ranging from company specific to market specific. Financial information is used by various stakeholders to assess a firm's current performance and to forecast the future as well.

Therefore the results in Table 8 show that return on equity negatively influences the economic value of the commercial banks. This may be as a result of the proportion of commercial banks (21%) publicly listed in the NSE and the possibility of herding behavior in

the stock market. The outcome confirms the findings by Kim, (2006¹⁵). The results also reveal significant positive relationship between Return on Assets and Economic Value depicting its influence on Economic Value of Kenyan commercial banks. This ratio¹⁶ measures the effectiveness of the use of total resources of the company (J.Fred Weston and Thomas E. Copeland: 1995). This is true for the Kenyan commercial banks that are required to maintain a statutory capital reserves.

Further, the findings indicated a significant positive relationship between Earnings per share and Economic Value which implies that investors place significant value on a company's earnings. This is also in line with what is described by the Price to Book Value (PBV) approach as well as other fundamental analytical approaches, on company's economic value as determined by the Discounted Cash flow Model¹⁷. There was also a significant positive relationship between Return on Equity and Return on Assets, Return on Assets and Earning per share but there was a negative relationship between Return on Equity and Earning per share. The evident negative relationship between return on equity and earnings per share for the Kenyan commercial banks explains a situation in which there are very few commercial banks publicly listed in the Nairobi Securities Exchange and the larger possibility of herding behavior in the Nairobi Securities Exchange coupled with possible weak governance issues. However, it should be noted that all the accounting measures examined in the study have significant influence on the economic value of the Kenya commercial banks and hence remain critical value measurement parameters.

In conclusion, it should be noted that the study results suggest that Economic Value Added is an effective measure of investor company valuation compensation system in terms of the firm's broad market value. The results also suggest that there is need for more Kenyan commercial banks to actively participate in the Nairobi Securities Exchange. And finally further studies should take in-depth analysis on more variables that measures the relationship between economic and accounting values since from econometric analysis, the R- squared is 18.46 which implies that there is a possibility of other variables which explains economic value as indicated by the model specification test in table 9. These findings may enhance examination of how stock prices which depict shareholders value are related to the financial performance of the banks. Therefore, the sector's performance can be improved if Kenyan

¹⁵Changes in operating and financial ratios corresponded to behavior aimed at increasing EV, whereby this behavior will in turn result in reported increased in the relative stock market performance of EV firms.

¹⁶ This is usually referred to as "the Return on Total Assets or Return on Investment."

¹⁷See more details by Francis, (1991) on Gordon Growth Model.

commercial banks listed in NSE and those not yet included embrace economic value measurement criteria of company value with a critical examination of the corporate governance issues which should take cognizance of the best international practices. Corporate governance has a fundamental bearing on the management of those macroeconomic (endogenous and exogenous) parameters with greater effect on company performance.

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