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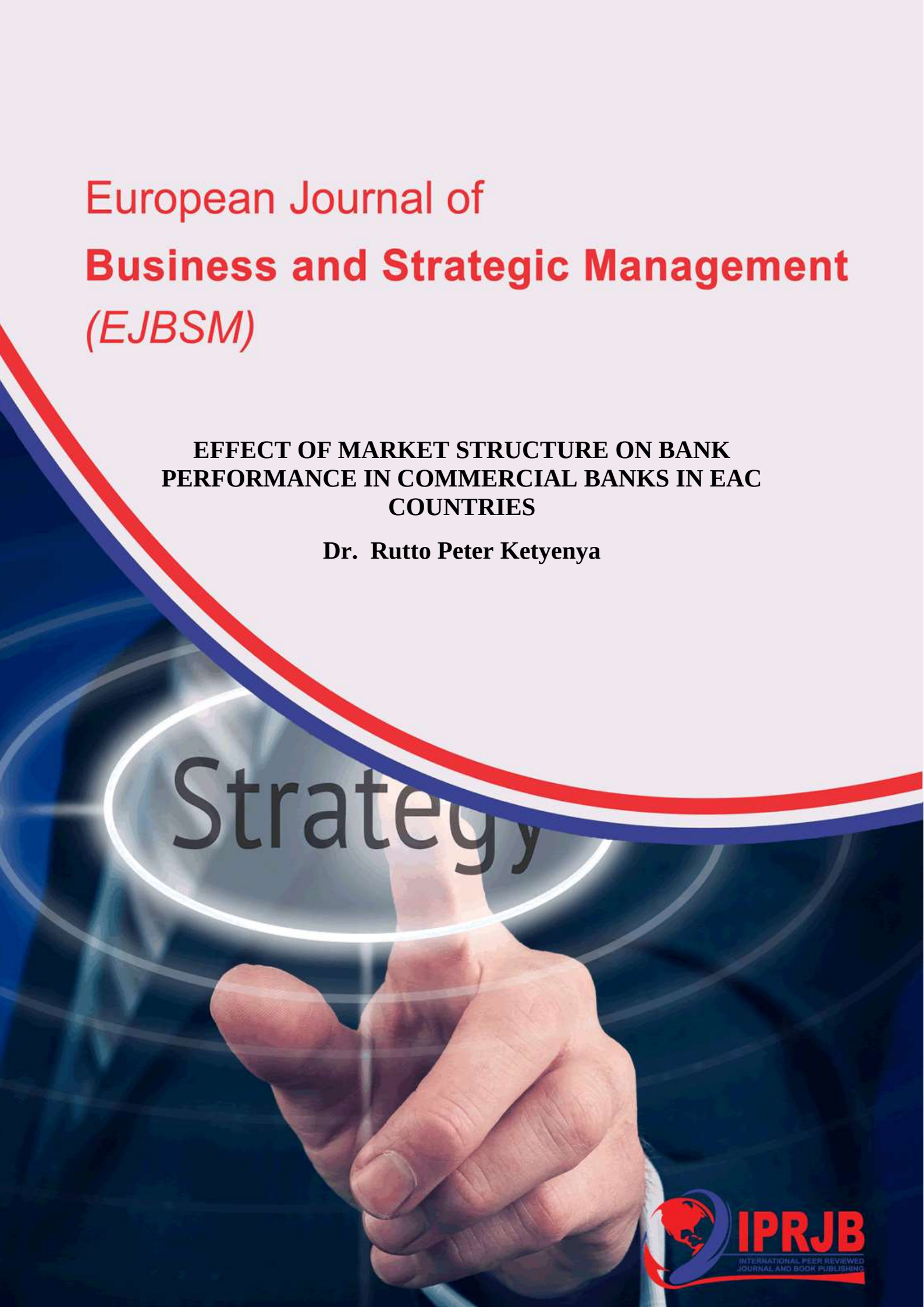

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EFFECT OF MARKET STRUCTURE ON BANK PERFORMANCE IN COMMERCIAL BANKS IN EAC COUNTRIES

*[1] Dr. Rutto Peter Ketyenya

Doctorate student, Dedan Kimathi University of Technology

Corresponding email address: dr.peterrutto@gmail.com

ABSTRACT

Purpose: The purpose of this study was to analyze effect of market structure on bank performance in commercial banks in EAC countries

Methodology: The study used cross country data analysis of 100 commercial banks and collected secondary data from annual published audited financial statements for the period 1997-2011

Results: The results indicate that there was positive and significant relationship between economic growth and performance measures.

***Policy recommendation*:** The study recommended that the Central bank should follow the performance levels from both the productivity and profitability aspects as a way of monitoring individual bank performance levels so as to boost economic growth in the economy

Keywords: *relationship, economic growth, bank performance*

1.1 INTRODUCTION

Banks are the main part of the financial sector in any economy performing valuable activities on both sides of the balance sheet. A commercial bank is defined by is a financial intermediary that raises funds primarily by issuing checkable deposits (deposits on which checks can be written), savings deposits (deposits that are payable on demand but do not allow the owner to write checks), and time deposits (Mishkin, 2001). The Financial Times (2013) have a similar definition where a commercial bank refers to a financial institution providing services for businesses, organizations and individuals. The study by Diamond and Rajan (2001) highlights the strength of the banking system as an essential requirement to ensure the economic stability and growth. Services include offering current, deposit and saving accounts as well as giving out loans to businesses. On the asset side, they enhance the flow of funds by lending to the cash starved users of funds, whereas they provide liquidity to savers on the liability side. Banks also facilitate the payments and settlement systems and support the smooth transfer of goods and services. They ensure productive investment of capital to stimulate the economic growth. Hence it is this banking system that constitutes the largest part of the financial system in most countries, especially in emerging and developing markets (Beck and Dermiguc-Kunt, 2009).

The European Central Bank (2010) defines bank performance as the capacity to generate sustainable profitability. Kumar and Gulati (2010) define performance in both profit and non-profit organizations as an appropriate combination of efficiency and effectiveness.

Profitability refers to the net gains after deducting all costs and is essential for ongoing activities as well as for its investors to obtain fair returns.

A performance measurement framework as noted by Bigliardi and Bottani (2010) assists in the process of performance measures building, by clarifying measurement boundaries, specifying performance measurement dimensions or views and may also provide initial intuitions into relationships among the dimensions. There are a multitude of measures used to assess bank performance with each group of stakeholders having its own focus of interest. (Rouse and Putterill, 2003)

The performance of commercial banks has also been influenced by other key macro-levels factors which include markets structure, financial structure and output. The relationship between performance and market structure has been a subject of debate in literature. Market structure refers to the number of participating banks in the market and the market shares of banks, including bank specific factors, such as cost efficiency, scale efficiency, and the risk attitude of banks. Market structure as highlighted by Wong *et al*., (2007) determines the performance of banks specifically banks' profits and pricing behaviors. In general, banks profitability and pricing power are hypothesized to be determined by market structure.. Amongst the various approaches, a number of studies have focused on the structure – performance relationship of banks, with the structure-conduct-performance (SCP) hypothesis and the efficient-structure (EFS) hypothesis widely tested.

The SCP paradigm as highlighted by Delis and Papanikolaou (2009) postulates that firms are able to extract higher profits in concentrated markets because they can resort to oligopolistic behavior and collusive arrangements. According to the SCP, a positive correlation between profitability and market concentration indicates that there is not enough competition in the banking market. The EFS hypotheses emphasizes that higher profits are not generated because of an oligopolistic behavior of the big firms but because they are more efficient than other firms in the market, hence the increase in size and the market share.

Review of literature highlighted the important relationship between performance and financial structure. Financial structure refers to the relative development of banks versus markets. Demirguc-Kunt and Huizinga (2000) analysed the influence of financial structure on profits and margins and found evidence that differences in bank and stock market development do translate into differences in the cost of bank financing for firms. However, they find that financial structure *per se* does not have a significant, independent influence on bank profits and margins. A similar study was also done by Ruiz-Porras (2009) who found the effect of financial structure on bank performance to be significant.

The banking sectors in the East African Community (EAC) countries as noted by Cihak and Podpiera (2005) consist of three main segments – large domestic banks, subsidiary banks or branches of international banks and small (domestic and foreign) banks. Other segments include mortgages, deposit taking microfinance institutions, representative offices of foreign banks, foreign exchange bureaus and credit reference bureaus. The International banks play a key role in each of the countries. The EAC countries have a total of 127 commercial banks comprising Kenya 43; Tanzania 32; Uganda 25; Rwanda 14 and Burundi 13 as at 31 December 2011.

1.2 Statement of the Problem

The worldwide financial crisis in 2008 highlighted the importance of financial systems and their role in supporting economic development. Commercial banks in particular play a critical

role as they intermediate funds between savers and investors and hence evaluating their performance is important to depositors, owners, new investors and the central bank. During the financial crisis, a number of banks collapsed and were placed under receivership thus investors lost their savings. Prior to their collapse, the banks had shown favorable performance when measured using the most frequently used measures of return on assets and return on equity which then prompts the questions: 'How suitable are the current measures being applied?', 'Are these measures measuring the same thing?', 'Which perspective is comprehensive enough to tell us about overall performance?'. These questions have brought into focus and reignited the debate on applicability of the various measures of bank performance. The various performance measures reflect different perspectives and one does not get a clear view of the overall performance. An attempt has been made to construct a composite measure on productivity (combining efficiency and effectiveness) but this excludes profitability. The review of the literature exposes a research gap whereby there is an absence of a measure that combines productivity and profitability to measure the overall performance of a financial institution.

Previous studies in East Africa have reviewed performance from the financial ratios perspective while others have looked at the aspects of efficiency but neither has considered the effectiveness of banks which is an important aspect of bank performance nor the application of a combined measure.

Performance of financial institutions is also influenced by key macro-level factors which include market structure, financial structure and economic growth. Therefore, there is need to assess the impact of these macro-level factors on commercial banks' performance, more so, the theoretical relationships between market structure, financial structure, output and performance measures due to the contradicting results from previous studies on these relationships.

This study therefore proposed a common measure that combined the key attributes of productivity and profitability to address this problem and analyzed the theoretical relationships with market structure, financial structure and output.

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1.3 Objective of the Study

The objective of the study was to analyze the effect of market structure on bank performance in commercial banks in EAC countries

2.0 LITERATURE REVIEW

2.1 Theoretical review

2.1.1 Market Structure Theories

The Structure performance relationship of banks has been extensively studied for the US banking industry. Earlier studies as pointed out by Wong *et al.,* (2007) on the structure performance relationship of the banking industry have usually been based on regression analysis in which indicators of bank performance, such as bank profitability and prices, were regressed on indicators of market structure such as the concentration index of the banking industry and market shares of individual banks.

According to Edwards *et al.,* (2006), Market structure conduct and performance (SCP) framework was derived from the neo-classical analysis of markets. The SCP was the brain

child of the Harvard school of thought and popularized during the 1940-60 with its empirical work involving the identification of correlations between industry structure and performance. What factors determine the performance of banks in general and how banks' profits and pricing behaviors are affected by market structure in particular, have been extensively studied (Wong *et al.,* 2007).Amongst the various approaches, a number of studies have focused on the structure –performance relationship of banks, with the structure-conduct-performance (SCP) hypothesis and the efficient-structure (EFS) hypothesis widely tested. In general, banks profitability and pricing power are hypothesized to be determined by market structure of the banking industry, such as the number of participating banks in the market and the market shares of banks, and bank specific factors, such as cost efficiency, scale efficiency, and the risk attitude of banks. Macroeconomic factors, such as real GDP growth and unemployment, may also be important determinants.

The basic idea of a structure-conduct-performance (SCP) model states that institutions in concentrated market earn excess profits, basically due to collusive power. This would imply that banks that fit this model become less efficient over time and their host countries suffer from a lack of competition. However, we see that often this is not the case. Banks in highly concentrated markets seem to be able to be efficient and their competitive environment seems to prosper with them. The consolidation of banks around the world in recent years is intensifying public policy debates on the influences of concentration and competition on the performance of banks.

Traditionally, as highlighted by Dietrich and Mattig (2010), the relationship between performance and market structure is analysed from a market power perspective. With respect to the corresponding structure-conduct-performance hypothesis, industry concentration is measured as the market share of the three biggest banks (CR3) in the respective country, acts as a proxy for market power. This argument then presupposes that firms in more concentrated markets should be able to collude and thus to set prices above marginal costs.

Aarma *et al.,* (2004) argue that internationalization, adoption of new banking technologies, deregulation, banking market consolidation and other recent trends in financial intermediation should result in increasing efficiency. On the other hand, since banks are no longer monopoly suppliers of financial services and products and markets are more contestable (increased competition between banks and new competition from non-bank financial institutions and markets), intermediation margins, net interest income and other income should result in decreasing profitability and efficiency. In any case, elimination of inefficiency and reducing costs would be a challenge for banks' survival in the rapidly changing market environment.

According to Dietrich and Mattig (2010), the prediction and measurement of market power has long commanded special attention for the banking industry. The vital role of banks in the economy encompasses their participation in the payment system, the transmission of monetary policy, and the provision of credit. The idea that market structures influence profitability has accordingly become a key concept that competes with views that competition and efficiency create structure.

The relationship between market structure and the profitability of banks is of concern to bank managers and to banking regulators. Particularly, as Brewer *et al.,* (2003) observes, the banking regulators have to weigh the potentially beneficial effects of mergers on the combined banks' profitability and viability against the possible detrimental impact on consumer welfare. For example, increased competition from financial deregulation in the

banking sector may force banks to invest into higher yielding assets by increasing their risk exposure beyond a reasonable level.

Empirical evidence, as noted by Wong *et al.*, (2004), finds that market structure, as measured by market concentration and market shares of banks, is either not a significant determinant of banks' performance or, to the extent that market consolidation in recent years have hampered competition and thus enhancing banks' profitability, its adverse effect has been largely offset by regulatory liberalization and technological progress during the same period.

3.0 RESEARCH METHODOLOGY

The study used cross country data analysis of 100 commercial banks and collected secondary data from annual published audited financial statements for the period 1997-2011.This study therefore, employed a quantitative/scientific approach to deal with this ambiguity within the East African region. The target population was 127 commercial banks licensed at the start of every calendar year beginning 1st January 1997 to 1st January 2011 in the five countries namely; Uganda, Kenya, Tanzania, Rwanda and Burundi. However, two countries were excluded namely Rwanda and Burundi due to the unavailability of data for at least three years on their stock exchanges. Burundi does not have a functional stock exchange while Rwanda has a demutualised stock exchange that begun full operation in 2010 making the total population to be 100 commercial banks. The five countries form the East African Union which has begun the process of integration into a monetary union and hence the special focus on this region. The relationship between the performance scores and the exogenous factors was then analyzed using regression and Analysis of Variance Tests (ANOVA) to assess the strength and fit of the models to bring out trends that will lead to conclusions.

4.0 RESULTS AND DISCUSSIONS

4.1 The effect of Market Structure on Bank Performance Measures

The objective was to analyze the effect of market structure on bank performance in commercial banks in EAC countries. Market structure was measured using three variables: market share (MS), Hirschman Herfindahl Index (HHI) and size (represented by log of total assets LnTA).

The MS was measured in terms of the deposits of individual commercial banks against the entire deposits of the banking sector. The level of market concentration was measured using the HHI which analyses each commercial bank.

4.1.1 Descriptive Statistics for Market structure

The average market share was 2.7% for Kenyan commercial banks. This is less compared with the East African Average of 9.2%. The average HHI was 0.26% and this is less than the

East African Average of 3.1%. The average log of total of assets was 4.696 and this compares well with the East African Average of 4.76.

Table 1: Descriptive Statistics for EAC, Kenya, Uganda and Tanzania

Variable	EAC		Kenya		Uganda		Tanzania	
	Mean	Std.dev	Mean	Std.dev	Mean	Std.dev	Mean	Std.dev
MS	.0916	.0794	.0270	.0367	.2	.2220	.0476	.0623
HHI	.0310	.0388	.0026	.0073	.0841	.1351	.0063	.0142
LnTA	4.7667	.9982	4.6968	1.6291	5.0711	2.2902	4.5561	1.6936

The average market share was 20% for Ugandan commercial banks. This is higher compared with the East African Average of 9.2%. The average HHI was 8.4% and this is higher than the East African Average of 3.1%. The average log of total of assets was 5.07 and this compares well with the East African Average of 4.76.

The average market share was 4.7% for Tanzanian commercial banks. This is low compared with the East African Average of 9.2%. The average HHI was 0.63% and this is lower than the East African Average of 3.1%. The average log of total of assets was 4.56 and this compares well with the East African Average of 4.76.

4.1.2 Normality Test for Kenya Data

Normality in data is a condition where the data is free from outliers or extreme variables. A normality test therefore checks whether the distribution of the data obeys the normality assumption. Regression analysis requires normal data since the standard errors and regression coefficients calculation require the use of a mean. Normality test is carried out using a Skewness and Kurtosis test (SK test) where if p-value>0.05, then the data is normally distributed.

Table 2: SK Test for normality for EAC Countries

Country	Variable	Pr(Skewness)	Pr(Kurtosis)	Adj. chi 2	SK Prob>chi2
Kenya	Market share	0.0000	0.0000	72.09	0.0000
	HHI	0.0000	0.0000	.	0.0000
	Ln TA	0.8645	0.0134	6	0.0498
Uganda	Market share	0.0090	0.8256	6.30	0.0427
	HHI	0.0015	0.3630	9.07	0.0107
	Ln TA	0.5537	0.0597	4.10	0.1288
Tanzania	Market share	0.0000	0.0113	30.33	0.0000
	HHI	0.0000	0.0000	.	0.0000
	Ln TA	0.1973	0.5665	2.03	0.3625
EAC	Market share	0.1629	0.0088	7.58	0.0226

	HHI	0.1394	0.0135	7.23	0.0269
	Ln TA	0.0049	0.0345	9.89	0.0071

Results for Uganda indicate in table 2 that lnTA with p-values of 0.1288 is normally distributed as the reported p-values of the joint skewness kurtosis test is greater than 0.05.

In Tanzania, the results indicate that lnTA for commercial banks is normally distributed as the reported p-value of the joint skewness kurtosis test of 0.3625 is greater than 0.05.

The results for the combined EAC as shown indicate that MS (0.0226), HHI (0.0269) and LnTA(0.0071) are not normally distributed as the reported p-values of the joint skewness kurtosis test is less than 0.05

4.1.3 Unit Root tests

Time series data is either stationary or non-stationary. A stationary time series is one whose statistical properties such as mean, variance, autocorrelation, are all constant over time. Such statistics are useful as descriptors of future behavior only if the series is stationary. In addition, the use of Ordinary Least Squares (OLS) relies on the stochastic process being stationary. When the stochastic process is non-stationary, the use of OLS can produce invalid estimates.

Time series data which is stationary does not have a unit root. Therefore, the first step in panel data analysis is to conduct unit root tests to check for the stationarity of the data. A unit root is a feature of processes that evolve through time that can cause problems in statistical inference involving time series models.

The various tests that are applied for testing the unit roots include the two Fisher tests namely the Dickey- Fuller (DF) test and the Philip-Perron (PP) test. An alternative test to the fisher test is the Levin-Lin-Chu unit-root test. The unit roots for the variables; Profit Margin(PM), Return on Assets (RoA) , Return on Equity (RoE), Net Interest Margin (NIM), Single Measure (SM), market share, Herfindahl Hirschman Index (HHI) and total assets (lnta) were conducted using the Levin-Lin-Chu unit-root test. The Levin-Lin-Chu unit-root tests the null hypothesis that the panels contain unit roots. If the p-value is less than the critical p-value of 0.05, then the null hypothesis is rejected and the alternative hypothesis that panel has no unit roots(panel is stationary) is accepted.

Results for Kenyan commercial banks (see appendix) indicate that the variables PM, RoA, RoE, NIM, SPM, market share, HHI were stationary (had no unit roots). However, lnta was non stationary (had unit roots) at level (before differencing). There was no need to go to first difference owing to the scope of this study.

Unit root tests (results in appendix) for Ugandan commercial banks indicate that all variables except RoA and RoE which have p-values of 0.2699 and 0.5660 respectively (and are greater than 0.05) and therefore we fail to accept the null hypotheses that the panel data is stationary.

Unit root tests presented (see appendix) for Tanzanian commercial banks indicates NIM has a p-value greater than .05 and hence we fail to accept the null hypothesis that panel is stationary. However we accept for the other variables which have p-values of less than .05 and hence reject the null hypothesis and conclude the panel is stationary.

The joint unit root tests results presented (see appendix) is a combination of the banks in the three countries and indicates that variables RoE (.00), Lnta (0.0119), Lnw1 (0.00) and Lnw2 (0.00) are stationary, that is their p-values are greater than 0.05. PM (0.2356), RoA (0.2816), NIM (0.1866), SPM (0.9866), HHI (0.9964) have p-values greater than .05 and hence are non stationary.

4.1.4 Joint regression tests between the dependent and independent variables Kenya

The final model results are presented in table 3. The results indicate that there is a negative and significant relationship between LnTA and ROE (p-value<0.05). The findings agree with those by Papadopoulos and Karagiannis, (2009) suggest that the largest sized banks are generally the least efficient banks and the smallest sized institutions appear to be the most efficient throughout the period. Therefore, inefficiency seems to be increasing with the bank size although only marginally. This seems to contradict the current consolidation of banks around the world in recent years is intensifying public policy debates on the influences of market structure on the performance of banks.

The regression models tested were:

$$PM = f(MS, HHI, LnTA)$$

$$ROA = f(MS, HHI, LnTA)$$

$$ROE = f(MS, HHI, LnTA)$$

$$NIM = f(MS, HHI, LnTA)$$

$$SPM = f(MS, HHI, LnTA)$$

$$OPM = f(MS, HHI, LnTA)$$

The results from the models are shown below:

$$PM = 0.294 + 0.624MS - 0.822HHI + 0.00671nTA$$
(3.94) (0.56) (-0.15) (0.48)

$$ROE = 0.227 + 0.226MS + 4.252HHI - 0.0091nTA$$
(12.14) (1.27) (2.43) (-2.50)

$$SPM = 0.0530 - 1.28MS + 5.496HHI + 0.07261nTA)$$
(2.06) (1.36) (-0.66) (-0.70)

$$ROA = 0.0321 + 0.411MS - 0.605HHI + 0.00271nTA$$
(2.06) (1.36) (-0.66) (-0.70)

$$NIM = 0.0553 - 0.0322MS + 1.112HHI + 0.00561nTA$$
(10.09) (-0.56) (1.55) (0.66)

The results in table 3 also indicate that there is a positive and significant relationship between HHI and ROE (p-value>0.05). Results reveal that LnTA is positively and significantly related to ROA (p-value<0.001). The findings agree with those in Dietrich and Mattig (2010), who noted that larger banks are likely to have a higher degree of product and loan diversification than smaller banks. As diversification reduces risks and economies of scale lead to increased operational efficiency, it is expected that this influences profitability and the net interest margin. Market Share has a negative and significant relationship with the SPM (p-value>0.05).

The adjusted R^2 as shown in table 4.6.3 was highest for OPM (28.2%) and lowest for PM (.2%). This indicates that the independent variables (market share, HHI and size) explain the model when regressed against the dependent variable OPM and that the model is stable.

Table 3: Joint Regression tests for Kenya

	PM	RoE	SPM	RoA	NIM	OPM
Market Share	0.624	0.226	1.280*	0.411	-0.0322	0.185
	(0.56)	(1.27)	(2.28)	(1.36)	(-0.56)	(2.15)
HHI	-0.822	4.252*	5.496	-0.605	1.112	3.654*
	(-0.15)	(2.43)	(1.54)	(-0.66)	(1.55)	(2.05)
Ln TA	0.00671	-0.00900*	0.0726***	-0.00266	0.000559	0.0187*
	(0.48)	(-2.50)	(8.05)	(-0.70)	(0.66)	(6.3)
Constant	0.294***	0.227***	0.0530	0.0321*	0.0553***	0.297*
	(3.94)	(12.14)	(1.17)	(2.06)	(10.09)	(8.46)
N	222	222	222	222	222	222
R^2	.002	.032	.226	0.05	0.08	0.282

NB: t-statistics in parentheses

*P<0.05, **p<.01, ***p<0.001

4.1.5 Comparative Model results using Panel Data Regression (Uganda)

The results in table 4 indicate that there is a positive and significant relationship between LnTA and PM (p-value<0.05). The findings agree with those in Dietrich and Mattig (2010), who noted that larger banks are likely to have a higher degree of product and loan diversification than smaller banks. As diversification reduces risks and economies of scale lead to increased operational efficiency, it is expected that this influences profitability and the net interest margin.

There is a negative and significant relationship between LnTA and NIM (p-value<0.05). Results also reveal that there is negative and significant relationship between LnTA and SPM (p-value<0.05).

The results also indicate that there is a negative and significant relationship between HHI and PM (p-value>0.05), between HHI and PM (p-value>0.01) and between HHI and ROA (p-

value>0.01) and between HHI and NIM (p-value>0.001). Markets share has a positive and significant relationship with the PM (p-value>0.05), ROA (p-value>0.01), ROE (p-value>0.05), NIM (p-value>0.001).

Table 4: Joint Regression results –Uganda

	PM	RoA	RoE	NIM	SPM	OPM
Market Share	1.625*	0.258**	0.412*	0.504***	0.615*	0.396*
	(2.21)	(3.28)	(2.28)	(4.31)	(0.36)	(1.91)
HHI	-2.256*	-0.329**	-2.66	-0.676**	0.830*	0.578*
	(2.16)	(-2.90)	(1.40)	(3.57)	(1.18)	(1.08)
Ln TA	0.050	0.00387	-0.0460	-0.007*	-0.0388***	-0.0379*
	(2.37)	(1.72)	(-0.26)	(-2.41)	(-7.21)	(-5.89)
Constant	-0.197	-0.0177	-0.619	0.0800**	1.019***	2.16*
	(-1.56)	(-1.52)	(-1.49)	(3.44)	(28.97)	(24.78)
N	30	30	30	30	30	30
R^2	0.558	0.668	0.384	0.304	0.360	0.330

NB: t-statistics in parentheses

P<0.05, **p<.01, ***p<0.001

The findings suggest that the largest sized banks are generally the least efficient banks and the smallest sized institutions appear to be the most efficient which supports the findings by Papadopoulos and Karagiannis, (2009). Therefore, inefficiency seems to be increasing with the bank size although only marginally. This seems to contradict the current consolidation of banks around the world in recent years is intensifying public policy debates on the influences of market structure on the performance of banks.

4.1.6 Comparative Model results using Panel Data Regression (Tanzania)

Fixed effects were used to run the PBT, ROE, SPM measures. Random effects were used to run ROA and NIM Model and the results are shown in table 5. The results further indicate that there is a negative and significant relationship between LnTA and SPM (p<.05) and a positive and significant relationship between LnTA and NIM (p<.01).

Table 5: Joint regression results- Tanzania

	PM	RoE	SPM	RoA	NIM	OPM
Market Share	2.194	0.873	3.726*	0.0138	9.454***	2.179*
	(0.76)	(0.20)	(2.71)	(0.73)	(4.27)	(1.96)
HHI	3.295	-5.696***	7.409***	0.195**	-0.245*	4.38*
	(1.86)	(-3.87)	(4.07)	(-1.88)	(-2.10)	(-3.60)

Ln TA	0.0349	0.00352	-0.0352	-0.00138	-0.245*	-0.0498
	(1.47)	(0.53)	(-1.92)	(-1.88)	(-2.10)	(-.693)
Constant	-0.139	0.102	0.500**	0.00972*	0.899	0.364
	(-1.10)	(0.45)	(3.79)	(2.50)	(1.94)	(2.49)
N	126	126	126	126	126	126
R^2	0.037	0.032	0.342	0.06	0.27	0.205

NB: t-statistics in parentheses

P<0.05, **p<.01, ***p<0.001

The results also indicate that there is a negative and significant relationship between HHI and RoE (p-value>0.001), between HHI and SPM (p-value>0.001) and between HHI and ROA (p-value>0.01) and between HHI and NIM (p-value>0.05). Markets share has a positive and significant relationship with the NIM (p-value>0.001) and SPM (p-value>0.05).

4.1.7 Comparative Model results using Panel Data Regression (Joint Countries)

A joint panel composed of the three countries (Kenya, Uganda and Tanzania) was then further analyzed. Results from both the fixed effects tests and the random effect tests indicate that a simple OLS model is the best model for the joint panel. The results are shown in table 6.

Table 6: Final results for joint balanced panel data

	PM	**RoA**	**RoE**	**NIM**	**SPM**	**OPM**
Market Share	-9.006*	-1.004*	79.58	-0.357	9.445*	5.832*
	(-2.51)	(2.26)	(1.43)	(-0.16)	(2.22)	(2.05)
HHI	17.53*	2.157*	-117.8	1.289	26.18*	24.36*
	(2.34)	(2.27)	(-1.04)	(0.28)	(2.90)	(3.15)
Ln TA	0.0397	-0.000909	-0.0523	-0.0828	0.0273	-0.103
	(1.27)	(-0.28)	(-0.22)	(-1.31)	(1.20)	(-1.09)
Constant	0.316	0.0493	-2.003	0.474	0.403*	-0.397
	(1.83)	(2.34)	(-1.18)	(1.51)	(2.48)	(-1.39)
N	18	18	18	18	18	18
R^2	0.410	0.502	0.560	0.395	0.907	0.781

NB: t-statistics in parentheses

*P<0.05, **p<.01, ***p<0.001

The adjusted R^2 for the balanced panel data set shows that SPM scores the highest at 90.7% and hence a goodness of fit.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

The objective sought to establish the relationship between market structure (market share, concentration and size) and bank performance measures. The results were done for both balanced and un-balanced panel data sets. The findings from the balanced panel data set indicate a negative and significant relationship between market share and profit margin (PM) and return on assets (ROA) but positive for the single performance measure (SPM) and the

overall performance measure (OPM). The concentration measure (represented by the Hirschman Herfindahl Index (HHI) is positive and significant for PM, ROA, SPM and OPM. The size (measured by the logarithm is negative but insignificant for all the performance measures. The unbalanced panel data set shows a positive and significant relationship for only market share and Return on equity (RoE) and SPM. The results show that SPM and OPM conform to the market structure theory for both the balanced and unbalanced panel data sets and can therefore be applied to test the effects of market share and concentration on bank performance.

5.2 Recommendations

The government, through the Competition Authority of Kenya, should constantly monitor the banking sector and strengthen anti- monopolistic policies where few banks dominate the market so as to protect small banks from unfair competition in the market. Small banks should adopt modern technology (online banking, use of automated teller machines and Mpesa) so as to be able to improve on their efficiency and effectiveness levels so as to compete with the large banks.

5.3 Future research areas

The study looked only at commercial banks in Kenya, Tanzania and Uganda. There is need for a review of other financial institutions namely community banks, microfinance institutions and co-operative societies which also intermediate funds.

The population of the commercial banks was drawn from Kenya, Uganda and Tanzania. Future studies can use larger samples of commercial banks and more countries in the context of the African perspective.

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