International Journal of Economics, Commerce and Management
United Kingdom ISSN 2348 0386 Vol. VII, Issue 12, December 2019

http://ijecm.co.uk/

THE EFFECT OF BANK SIZE ON PROFITABILITY OF COMMERCIAL BANKS IN KENYA

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Abstract

This paper examines the effect of banks size on the profitability of commercial banks and in addition, evaluates the existence of equilibrium\disequilibrium relationship between the two variables. The study analyzed a time series data sourced from across 42 commercial banks in Kenya covering 2009 to 2018 period. The regulator's weighted composite model for assessing bank size was used, whilst the profitability attribute, return on assets was captured using earnings before interest and tax over assets. Regressions analysis assessed the direction and magnitude of the relationships while the autoregressive distributed lag model was used to establish the equilibrium steadiness as well as the speed of adjustment to equilibrium. The results revealed that banks size had a positive significant effect on returns on assets. Further,

the study established the existence of both long-run and short-run relation with adjustment speed of 95 percent to equilibrium in a year. The study concluded that the size of a bank plausibly relates with profitability and as such, banks consolidation and other expansion strategies enhance bank profitability as evidenced by bidirectional causality between the variables.

Keywords: Profitability, Return on Assets, Bank Size, Autoregressive distributed lag

INTRODUCTION

World over, the frequencies of the financial crisis over recent times has generated unsatisfied curiosity in the banking systems. This equally has heightened the policymakers' tension as to whether the size of a bank actually matters in relation to the profitability of banks. According to Almazari (2014), the capacity to sustain profits over time remain the first bank's line of defense as it absorbs unexpected losses, strengthens banks capital base and in addition, used to improve future performance through re-investment of the retained earnings. In contrast, a loss-making bank depletes its capital base and weakens financial performance, which in turn, puts equity and debt holders at risk. The profitability indicator, return on assets (ROA) often show how profitable a firm compared with the peers. As such, the bank's returns on assets remains a focal point of interest, and has emerged as the best indicator that depicts the strength of an entity to produce adequate results. It remains a key business concern of every leader, investor, customer or owner (Terziovski & Samson, 2000).

Bank size, on the other hand, plays an important role in the prediction of profitability when economies of scale are considered. For instance, a forward-looking commercial bank attempts to increase its size through consolidation —mergers and acquisitions— in order to gain a competitive edge over the competition. A bank may leverage on average cost reduction per unit while enhancing efficiency, capital base and market share. Babalola and Abiola (2013) opined that a larger bank is more influential in the strategic decision and have more influence upon its stakeholders, competitors, efficiency and in addition, more profitable relative to a small bank. Bank size uniqueness in terms of assets, capital, deposits and loans influence the quality of decisions on the activities undertaken by a bank, which in effect, affects the strength of financial performance (Olowokure, Tanko & Nyor, 2015).

Banks play a critical role in any financial system, in fact, most countries, and as such are highly supervised and regulated. The size becomes an analysis component bearing in mind that banks connect to all other sectors of the economy. Interestingly, large corporate clientele

prefers financial supermarket models hubs, which moves together with trust indoctrination. The trust whim for larger sized banks resonates well with the business stability risk, which potentially has some ramification effect on the economy and societal welfare. Thus, microanalysis of banks size in relation to the profitability of a bank becomes an attractive narrative that needs a clear dichotomy and understanding. Bank size is the real monster that brings complexities and threats to economies, especially when considered along with the interconnectedness and international linkages. Together indeed, exacerbates the instability problem if such entities are so big to fail (Buiter, 2009).

The largeness of a bank can be decomposed into; vertical on activities and products; or horizontal on the supply of a product or service across several entities. Thus, a puzzled endless debate on the optimal bank size, management complexity and exposures associated with activities ranges. Larger banks engage more in market activities outside their traditional lending, which of late, has escalated and grown significantly. This paradigm shift of activities in the developed world has warranted restriction to reduce bank size exposure (Vinals et al., 2013). Financial liberalization and deregulations, product innovations and technology have led to the proliferation of financial supermarkets equivalent. Accordingly, larger banks tend to have lower capital base, less-stable funding, engaging in more-market based activities as well as more complex than the small banks. However, the failures associated with the larger banks tend to be more disruptive to the financial system than failures of small banks (Laeven et al., 2014).

The recent regulatory framework in Kenya inevitably prompted commercial banks to shift banking business model from revenue and profit growth to key ratios, size scale and stakeholders returns. Perhaps this has ignited a wave of banking consolidation in the form of merger and acquisition, which has gathered pace for the last five years. In this new metamorphosis, the stable banks target smaller and weaker with a clear potential aim of enhancing key financial ratios and perhaps penetrate new markets while expanding the range of activities and muscle market power from the competition. This potentially has an effect of reducing the numbers of banks, but stable, stronger as well as well-capitalized banks and by extension, stable sector.

The consolidation model builds trust perceptions associated with larger banks of being stable and risk-free. Managers earn trust, which reduces depositors and other investors' worst fears over risk. Because of trust, stakeholders overlook setting of high fees, which ultimately not seen as costs. In the end, higher fees charged on assets with high-expected returns, which translate to higher profits. Therefore, it is of interest to know how such a paradigm shift in banks expansive activities would affect the witnessed profitability challenges associated with the sector. Therefore as to whether bank size actually has any effect on the profitability of banks in

Kenya's context is still a puzzle and intellectually appealing. Thus, the need to undertake this study in order to demystify the mystery.

Research Objective

The objective of this study was to assess the relationships between bank size and profitability of commercial banks in Kenya. Specifically, to:

a) Estimate the effect of bank size on returns on assets of commercial banks in Kenya.
b) Evaluate the existence of a long-run equilibrium relationship between bank size and returns on assets of commercial banks in Kenya.

LITERATURE REVIEW

The theory underpinning this study is resource-based theory, which assumes that commercial banks have one objective; maximizing wealth and by extension, profit maximizers. More than often, banks use owned, controlled, available resources to offer and gain competitive advantage through expansion into related business activities, which use similar resources. The theory puts more emphasis on the bank's effectiveness in utilizing resources in order to yield higher financial performance (Barney & Peteraf, 2003). The resource-based theory links merger and acquisition as a strategy of applying bank's unemployed resources such as capital, skills, technology, innovative products and services in profitable, but related activities, which use similar resources.

These related banking activities include engagement in bancassurance, foreign exchange trading, investments and other off-balance sheet activities. These expands the scale and scope of commercial banks, both vertically and horizontally, with the ultimate goal of improving financial performance (Wernerfelt, 1984). Due to the economies of scale, commercial banks could be able to provide quality products/services at lower input cost using its unemployed, owned and controlled resources, while charging higher prices (Barney& Peteraf, 2003). This exploitation of potential synergies expected from banks related activities, resources and competencies can lead to a sustainable competitive advantage and therefore, a superior profit. This theory seems more promising and intuitively appealing, yet undeveloped in the context of bank and financial performance.

There are number of thoughts that support the theoretical fairytale about large banks undertaking high-risk activities that generate higher returns such as in banks trading books, bancassurance and somewhat short-term debts, which rather provide quick kill((Mester, 2010; Kristen & Sengupta 2016; Shleifer & Vishny, 2010; Gennaioli, Shleifer, & Vishny, 2013; Boot & Ratnovski, 2012). On the other hand, others observe from too-big-to-fail lenses analogy,

suggesting that larger banks attract regulators bailout to avoid systemic catastrophe associated with the size, complexity, and interconnectedness to other sectors of the economy (Farhi& Tirole, 2012). Agency cost perspective become handy also as larger and complex banks engage in multiple activities such as bundled lending and services, investment, trading and off-balance sheet items which increase agency problems and weak governance structure, these may outwit larger scale benefits (Bolton et al. 2007; Laeven &Levine, 2007).

Goddard et al. (2008) used panel data from US credit union covering 993 to 2004 to evaluate the influence of bank size on performance. The research found that a positive indirect exposure effect for large banks outweighed the negative direct exposure effects and found evidence that the relationship between performance and bank size positively correlates with performance through economies of scale and scope. Compared to small banks, large banks tend to have a larger market share because of better bargaining power, superior financing position, and more efficient cost control, thus, larger banks report higher returns.

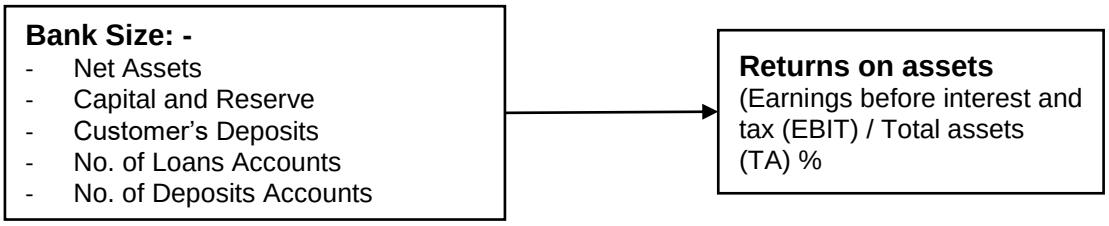
In an effort to investigate the size effect on financial performance in the EU banking industry, Lepetit, Rous and Tarazi (2008) used a data set from 734 banks for the period between 1996 and 2002. In consideration of banks size effect, they found a positive link with the financial performance for smaller banks. However, they suggested that a larger share of trading activities might not be associated with higher performance for smaller banks, but in some cases. Muhindi and Ngaba (2018) used a panel data from 2012 to 2016 to assess the influence of bank size on the financial performance of Kenyan banks using; the number of branches, capital base, number of customer deposit, loans and advances as the key variables. The study found a positive relationship between bank size and financial performance and revealed that larger banks exhibit higher ROA relative to medium and small. However, an earlier study by Mulwa and Kosgei (2016) found a negative relationship between bank size and financial performance, which conflict.

In an endeavor to examine the influence of size on efficiency and performance, Bonin, Hassan and Watchtel (2004) used a panel data from 225 banks, across eleven transitioning countries from 1996 to 2000. The study also observes that efficiency declines with bank size. Abel and Roux (2016) evaluated the relationships among efficiency, banksize and performance of banks in Zimbabwe between 2009 and 2014. The study found that efficiency relates positively to financial performance and economic stability. The study suggested that an increase in economic activities increases the demand for financial services, which increases efficiency.

Conceptual Framework and Hypotheses

Based on the theoretical and literature review, the following conceptual model guided the study as presented in Figure 1. The figure shows that the relationship could be influenced by the bank size as shown by the arrow representation.

Figure 1: Conceptual model and hypotheses



Based on the research objectives the study developed following null-hypothesis

H_{01}; bank size does not significantly affect returns on assets

H_{02}; no long-run equilibrium relationship between bank size and returns on assets

METHODOLOGY

This study used secondary data extracted from annual published financial records for commercial banks. It was a census study of all commercial banks in Kenya, covering 2009-2018-study period, and across forty-two banks, forming adequate four-hundred-twenty (420) data points. The panel data study period was selected because of the stringent banking laws and guidelines enacted including interest gapping, and the technologies adapt, which has changed the transitional channels significantly. The regulator's weighted composite index was used to capture bank size (BS), while returns on assets (ROA) was used as a financial performance attribute. The regulator's size assessment model assigns equal weights of thirty percent (33%) to each of the bank's net assets, capital and reserves, and market shares making 99 percent (99%), while the remaining one percent (1%) is distributed equally over the number of deposit and loans accounts.

In banking, profitability can be measured through financial performance traditional indicators; returns on assets (ROA), returns on equity (ROE), returns on capital employed (ROCE) and interest margin (NIM). This study used ROA, an indicator that satisfies all stakeholders of funds such as shareholders, debtors, creditors, debenture, bondholders etc. This indicator is broader and useful compared to ROE, which measures returns only from the shareholders' perspective. ROA was measured using earnings before interest and tax (EBIT) over the average total assets. Banks have many assets by nature, making them highly

leveraged, which imply that their ROA generally are low. This ratio usually is affected directly by the sector's endogenous and exogenous factors. The ratio shows how best a bank uses its investment funds in generating returns (Almazari, 2014).

For model suitability assessment, the Hausman test was used with the null-hypothesis that the random-effects model (REM) was appropriate while the alternative was the fixed-effects model (FEM) was appropriate. The non-significance of the output is normally desired. The results are as shown in table 1.

Table 1: Correlated Random Effects - Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.89621	2	0.0657

Table 1 results provide evidence of insignificant chi-square (χ^2 = 5.89621, DF = two, P = 0.0657). Based on the insignificance (P > .05) that the study fails to reject the null- hypothesis. This implies that the study adopted REM in the prediction as in equation 1.

$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_i + U_{it}$ …… (1)

Where : Y_{it} = dependent variable of bank ***i*** at time ***t***, ***i*** = observation, ***t*** = period, X_{it} = vector of independent variables, β_0 = constant term, $\beta_1, \beta_2, \beta_3$, = coefficients of independent variables, ε_{it} = composite error term, U_{it}=idiosyncratic disturbances. Equation (1) assumes that the slope (β_1) is a random mean and the intercept for each bank is β_{1i}.

Diagnostic tests

The Augmented Dickey Fuller (ADF) unit root tested for the data stationarity and the cointegration order was adopted. The ADF decision criteria; reject the null hypothesis if the computed ADF value were greater than critical values with significance. Results are as shown in Table 2.

Table 2: Augmented Dickey-Fuller test statistic

	Level	t-statistic BS	Prob.*	t-statistic ROA	Prob.*
ADF statistic		-22.865	0.000	-20.90133	0.000
Test critical values:	1%	-3.980112		-3.980112	
	5%	-3.420584		-3.420584	
	10%	-3.132989		-3.132989	

*MacKinnon (1996) one-sided p-values. Null Hypothesis: ROA/BS has a unit root. Exogenous: Constant, Linear Trend. Lag Length: 0 (Automatic - based on SIC, maxlag=17)

Table 2 computed absolute ADF of ROA and BS were 20.9 and 22.87 respectively. The score was highly significant (P = .000) which means that all data variables had no unit root (ADF>CT) at a level. This implies that the data was stationary at a 5 percent level with integration order 1(*0*). Therefore, based on these results, the panel data variables co-integrated well and as such, it was safe to adopt other time series models such as ARDL.

The autocorrelation/serial correlation assessment was done using the Breusch-Godfrey Serial Correlation Lagrange Multiplier (LM) test with the null-hypothesis that data variables had serial correlation and alternative of no serial correlation. Insignificant LM outcome is desirable as shown in table 3.

Table 3: Breusch-Godfrey Serial Correlation LM Test

F-statistic	112.6918	Prob. F(2,413)	0.17662
Obs*R-squared	147.5745	Prob. Chi-Square(2)	0.07945

Table 3 shows insignificant LM test results (F (2,413) = 112.7, P = .17, and $\chi 2$ = 147.6, P = .079), which implies no serial correlation between the explanatory variables.

In error terms homogeneity assessment, the Breusch and Pagan) test was used with the null-hypothesis that error terms were homoscedastic and alternative of heteroscedasticity. The insignificance outcome is desired as shown in Table 4.

Table 4: Heteroscedasticity Test: Breusch-Pagan-Godfrey Results

F-statistic	0.410320	Prob. F(3,414)	0.5457
Obs*R-squared	1.239167	Prob. Chi-Square(3)	0.6436

Table 4 results reveal insignificant results (F (3,414) = .41, P = .5457 χ^2 = 1.24, P = .6436), which imply that error terms were homogeneous as such no evidence of heteroscedasticity.

Correlation and regression analysis does not guide on causation. In other words, the presence of correlation does not means causation. The pairwise Granger causality analysis was carried out in order to determine as to whether the cross-section-time series data was useful in forecasting each other. The Granger causality results are as shown in Table 5.

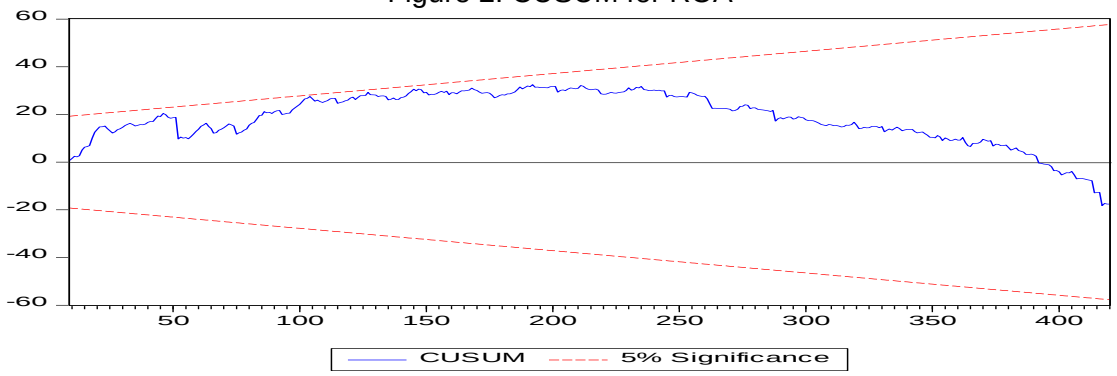
Table 5: Pairwise Granger causality test; Sample: 1 420 Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
BS does not Granger Cause ROA	418	5.57856	0.0041
ROA does not Granger Cause BS	418	4.30686	0.0141

The results show that N=418, F=5.57856, P=.004, meaning bank size does granger cause returns on assets and N=418, F=4.30686, P=.0141, meaning ROA does granger cause BS. Therefore, the study failed to reject the null-hypothesis and demonstrate that at lag 2, there is bidirectional causality between returns on assets and bank size.

For stability tests, the cumulative sum (CUSUM) test of the recursive residuals with the 5% critical lines was carried. CUSUM results are shown in figure 2.

Figure 2: CUSUM for ROA



From figure 2, the results show that the cumulative sum of squares was generally within the significance red lines, suggesting that the residual variances were stable which imply that ROA was stable and could be predicted successfully.

ANALYSIS AND FINDINGS

Descriptive statistics

In order to visualize the dataset, descriptive statistics were generated as shown in table 6.

Table 6: Descriptive Statistics Results

Statistic / Variable	Return on Assets (ROA)	Bank Size (BS)
Mean	2.032952	2.383667
Maximum	10.40000	14.52000
Minimum	-32.15000	0.070000
Std. Dev.	3.760873	3.134857
Skewness	-3.035954	1.902377
Kurtosis	3.22443	3.152713
Jarque-Bera	7890.979	427.2757
Probability	0.076400	0.068000
Observations	420	420

Results reveal that ROA and BS had a mean of 2.03 and 2.38 respectively with the lowest and highest returns earned being negative 32.2 percent and positive 10.4 percent respectively. The largest bank had a mean score of 14.5 percent while the smallest had a score of 7 percent. The results show a negative skewness for ROA, providing evidence that data distribution was more to left tail than that of a normal distribution. It had a positive Kurtosis, which shows that the data leans to the left of mean and heavily tailed distribution than normal. The Jarque-Bera insignificance (P > .05) reveals that the variables data in all cases were normally distributed. Positive kurtosis (ROA = 3.22443 & BS = 3.152713) coefficients indicate a relatively peaked distribution. The skewness and kurtosis felt within the accepted range of chance fluctuation and indicated that the distribution had no significant skewness and kurtosis problem.

Regression of bank size and returns on assets

The first null hypothesis (**H_{01}**) stated that bank size does not significantly affect returns on assets. Simple regression results are as presented in Table 7.

Table 7: Regression results for BS and ROA.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error	Durbin-Watson
1	.422[a]	.1783	.1722	.03792	1.796

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.001	1	.001	.513	.044[a]
	Residual	.598	416	.001		
	Total	.599	417			

Coefficients[b]

Model		Unstandardized β	Std. Error	Standardized β	t	Sig.
1	(Constant)	.021	.002		9.177	.000
	Bank Size	.980	.001	.4223	3.717	.044

a. Predictors: (Constant), Bank Size: b. Dependent Variable: Return on Assets

Table 7 shows that BS explains 17 percent ($\bar{R}^2$ = .1722) of the variations in ROA. The model finding shows that the independent variable, BS predicts precisely the dependent variable, ROA with significance (F (1,416) = .513, P = .044). The Durbin-Watson (*d* = 1.798) close to two implies that the independent error term assumption is tenable. The model further reveals that both unstandardized beta coefficient (β = .980, t = 3.717, P=.044) is positive and statistically significant. This implies that the bank's size coefficient was significantly different from zero and

as such, the null-hypothesis (H_{01}) that the population value for the regression coefficient was zero (0) was rejected. The prediction equation can be presented as:

$ROA_{it} = \beta_0 + \beta_1 (BS) + \varepsilon_{it}$.

ROA` = .021 + .980(BS)

Where: ROA`= the predicted return on assets,

.021 = constant (β_0),

.980 = the expected change on ROA` due to a 1-unit change in BS.

ARDL Long Run Form and Bounds Test Results

The second null-hypothesis (H_{02}) evaluated the absence/presence of a long-run equilibrium relationship between the dependent and independent variables, using the Autoregressive Distributed Lag (ARDL) approach (Table 8). The ARDL long-run form and bounds test the presence of a steady-state equilibrium between variables. The rule of thumb; long-run equilibrium existed if F-statistic becomes greater than the upper bound critical values and does not exist if less than the lower bound. The results would be inconclusive if F-statistics falls in between the upper and the lower bounds critical values (Nayaran, 2005).

Table 8: ARDL Long Run Form and Bounds Test Results

Levels Equation

Case 5: Unrestricted Constant and Unrestricted Trend

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
BS	.354089	.105002	3.372208	.0008
EC = ROA - (0.3541*BS)				
F-Bounds Test		**Null Hypothesis: No levels relationship**		
Test Statistic	**Value**	**Signif.**	**I(0)**	**I(1)**
			Asymptotic: n=1000	
F-statistic	186.7307	5%	6.56	7.3
k	**1**	**1%**	**8.74**	**9.63**
Actual Sample Size	418		Finite Sample: n=80	
		5%	6.82	7.67
		1%	9.17	10.24
t-Bounds Test		**Null Hypothesis: No levels relationship**		
Test Statistic	**Value**	**Signif.**	**I(0)**	**I(1)**
t-statistic	-19.32444	5%	-3.41	-3.69
		1%	-3.96	-4.26
Dependent Variable: D(ROA): Selected Model: ARDL(1, 2), Sample: 1 420: Included observations: 418				

From Table 8, the absolute values of lower bound and upper were 6.56 and 7.3 respectively, while the F-statistic was 186.7307 both at 5 percent significance level. Based on these results, the F-statistic was above the upper-bound critical value and thus, the test result provides enough evidence to reject the second null-hypothesis (H_{02}). The study found a non-spurious long-run level relationship between the bank size and returns on assets, with an error correction equation, EC = ROA - (0.3541*BS).

Error Correction Model (ECM) Estimator Tests Results

Given the existence of a long-run equilibrium relationship, a short-run relationship was explored using Error Correction (ECM). ECM explains the speed of adjustment in restoring disequilibrium in the dynamic model, with a negative sign desired. The ECM results estimates are as presented in Table 9.

Table 9: ARDL Error Correction Regression

ECM Regression.Selected Model

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.284796	0.330422	0.861916	0.3892
@TREND	0.004024	0.001376	2.924341	0.0036
D(BS)	0.515401	0.042221	12.20723	0.0000
D(BS(-1))	0.145876	0.041683	3.499665	0.0005
CointEq(-1)*	**-0.949159**	**0.049056**	**-19.34859**	**0.0000**
R-squared	0.610721	Mean dependent var		0.005909
Adjusted R-squared	0.606950	S.D. dependent var		5.353464
S.E. of regression	3.356283	Akaike info criterion		5.271435
Sum squared resid	4652.295	Schwarz criterion		5.319706
Log likelihood	-1096.730	Hannan-Quinn criter.		5.290518
F-statistic	161.9836	Durbin-Watson stat		2.016849
Prob(F-statistic)	0.000000			

Selected Model: ARDL(1, 2), Case 5: Unrestricted Constant and Unrestricted Trend, Sample: 1 420 Included observations: 418

Table 9 shows a high negative (-.9491159) ECM cointEq (-1)* with significant (P = .0000) at 5 percent level. The independent variables bank size had positive coefficients with significant (β =.515401,t= 12.20723, P = .0000. The results indicate a goodness-of-fit short-run model with satisfactory (R^2 = .610721) and adjusted R-squared of 60 percent ($\bar{R}^2$= .606950), with the Durbin-Watson (*d =2.016849*) falling within the acceptable range (1.5 and 2.5). This implies that

the short-run effects of the bank size explain about 61 percent of the change in returns on assets. The estimated value of the coefficient of ECM implies that about 95 percent (cointEq (-1)* = -.9491159) of the disequilibrium in returns on assets would offset by the short-run adjustment within the same period (year).

SUMMARY OF FINDINGS

The main objective of the study was to establish the relationships between bank size and profitability of commercial banks in Kenya. The independent variable bank size was modelled as a composite index based net assets, core capital, customers' deposits, and numbers of loans and deposits, in a weighted ratio of 33:33:33:.05:.05 consecutively. The profitability attribute, the returns on assets (ROA) was computed as the ratio of earnings before interest and tax (EBIT) over total assets. This paper anchors on resource-based theory, which assumes that banks are profit maximizer and often own and control some underemployed resources. It puts more emphasis on the bank's effectiveness in utilizing resources to yield higher financial performance.

Based on the testing of the first null-hypothesis (H_{01}), the study found that bank size relates positively (β= 0.354089, P = .0008) with returns on assets and explains 17 percent ($\bar{R}^2$=.1722) of the variation in ROA. This implies that on average the higher the bank size the higher the returns on assets earned and vice-versa. This implies that larger banks report higher returns on assets than small commercial banks.

Based on the analysis of the second null-hypothesis (H_{02}), the study found a non-spurious long-run and short-term level relationship between the bank size and return on assets, with the error correction equation, EC = ROA - (0.3541*BS). The estimated value of the coefficient of ECM implies that about 95 percent of the disequilibrium in returns on assets would be corrected by the short-run adjustment within the same period, normally a year. This shows that there existed a statistically significant relationship between the size of a bank and return on assets in the short-run. This means that in the short-run a 1 percent increase in bank size leads to a respective increase in returns on assets. Thus implies that bank size in the short-run does not improve the profitability of commercial banks in Kenya instantly, after some time. In summary, the findings of this study demonstrate that bank size influences significantly the returns of commercial banks in Kenya.

CONCLUSIONS

Although consolidation is an emerging concern in Kenya as an expansion strategy, hitherto, banks had embraced multiple banking and non-banking activities. The study concludes that the size of a bank significantly affects returns on assets of commercial banks in Kenya. The paper

concludes that bank composite index relationship with returns on assets becomes plausible. The study concludes that there exists both long-run and short-run equilibrium between the bank size and returns of assets. The model prediction shows that commercial bank embraces consolidation as an expansion strategy though it brings along with the cost aspects, management complexity and perhaps increased exposure. The study found that as bank size increases, the relationship with return on assets increases also. This demonstrates that as commercial banks engage in expansion strategies like merger and acquisition, the profitability opportunities increases as well to the extent that the exposure increases the benefits and as such, the effects on returns on assets becomes strengthens.

RECOMMENDATIONS

In terms of policy and practice recommendations, the study has recommendations to bank management, regulators and potential investors. Policymakers would appreciate the contribution of the study in providing a scale of opportunities in order to understand the issues and constraints that affect the banking sector's performance and would assist in prioritizing on the sound expansive related activities mix, using new policies as a guide. The regulators, on the other hand, can develop guidelines to be implemented by commercial banks bearing in mind the size of bank to avoid unnecessary bank-runs or bursts in financial indicators and unwarranted receivership or management of banks. Bank managers would find the findings useful in identifying better business models, which improves financial records. It would be useful in designing remedial schemes or programs to support the operations of banks as well as entrepreneurs to diversify more and adapt effective economies of scale stream, which maintains banks' financial stability over time as a going concern.

For further research, the study recommends research on profitability across institutions, considering the dynamism of technology and the influx of micro-financial institution and agency banking. The study suggests a study on their impact on the profitability of commercial banks in Kenya. The current paper focused only on the registered commercial banks in Kenya and replication of the study could be undertaken on financial institution not falling under this jurisdiction such as insurance, housing finance, microfinance institutions and foreign exchange bureaus.

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