



RELATIONSHIP BETWEEN FIRM SIZE AND PROFITABILITY OF COMMERCIAL BANKS IN KENYA

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Abstract

This study sought to establish the relationship between firm size and profitability of commercial banks in Kenya. The study followed a descriptive research design and used secondary data obtained from the company annual reports and partly from the central bank of Kenya. Bank size was measured using annual bank deposits and annual gross loans advanced in a bank while profitability was measured using the annual net profit after tax for each bank for the five years' period (2012-2016). Data was collected using secondary data collection sheet from annual bank supervision reports for the respective period. Data was analyzed using SPSS version 23 through stepwise regression analysis to determine the relationship between each of the measures of size and profitability of the bank. The data was tested for normality of response variable, homoskedasticity, multicollinearity and independence. The study established an overall y and R-Square of 0.790 and 0.624 respectively indicating an overall positive correlation which is moderately strong. Both regressors were found to be statistically significant. The study

concluded that firm size as measured by customer deposits and loans advanced had a positive relationship with profitability of commercial banks in Kenya. The study recommends that banks should endeavor to maintain high levels of deposits as they have a strong bearing on profitability of banks in Kenya. This conforms to the financial intermediation theory in an active banking sector.

Keywords: Firm Size, Profitability, Creditworthy, Net profit, Commercial Banks

INTRODUCTION

Profitability refers to a firm's ability to generate profit every year. Profitability in the banking is essential as it generates employment opportunities for people while at the same time generating revenue to the government in the form of taxes. The existence of a bank is highly dependent on its level of profitability. The ability of a banking institution to provide a wide variety of services is not a sufficient measure of its ability to survive and remain sustainable (Murthy & Sree, 2003). Profitability among banking institutions is not only beneficial to the government and people who gain access to employment opportunities, but it also creates increased income for investors (Willison et al., (2013). In the long run, an improvement in the profitability of banks brings forth an improvement in living standards among people within a nation. It is, therefore, essential to investigate factors influencing profitability among banks.

Although commercial banks of all sizes provide credit and other financial products to their customers, Javaid et al. (2011) posit that large banks have adequate capital to meet the credit demands of large firms and operate at a scale where more specialized banking products can be provided more efficiently for higher profitability. Commercial banks in Kenya play an essential role in economic growth. The functions of commercial banks are accepting deposits, giving out credit facilities, and ensuring safe custody of employees' valuables and financial advice to its customers. Commercial banks offer employment opportunities and access to credit for a large corporation and SMEs. A bank's Profitability is essential for the development of the economy; this is because it affects the welfare of the employees and the economic development of a country (Willison et al., 2013).

The banking industry is presided over by the Banking Act and supervised by the Central Bank of Kenya (CBK) Act and guidelines. The banking sector was liberalized in 1995 and exchange controls lifted. CBK that is under the Ministry of finance is charged with the responsibility to formulate and implement monetary policies, liquidity management and ensuring that the financial system is functioning accordingly. The banking sector in Kenya consists of

commercial banks, Non-Bank Financial Institutions, Forex Bureaus, and Microfinance banks as the regulated institutions. As at 31st December 2016, the banking sector had forty-three commercial banks where, 42 were commercial banks while 1 was a mortgage finance company with eight representative officers of foreign banks, 9 Microfinance institutions, two credit Reference Bureaus, 13 Money Remittance Providers and 87 Foreign Exchange (forex) Bureaus. Only 30 banking institutions had local ownership while foreign investors owned 13 (CBK, 2015). It is notable that the Kenyan economy has many banking institutions, some small while others are large.

It is worth noting that the profitability of a bank is hampered by many factors including high operational costs, stringent regulations among other factors. Various research studies have been conducted to determine factors influencing the profitability of banks. Some of the factors identified include the quality of assets, the loan quality, and size. While some other research indicates a positive relationship between bank size and profitability, other research studies hold that some smaller sized firms attain higher levels of profitability relative to larger banks. Some argue that smaller firms can specialize since their functions and processes are less complex as compared to larger firms, thus increasing consumer confidence.

Performance of Commercial Banks in Kenya

Murthy and Sree (2003) examined the performance of large and smaller banks in the US; the findings revealed that larger banks faced high-cost reduction as compared to smaller banks. It was found that larger costs reduction occurred as the bank increased in size leading to improvement in profit. Willison et al. (2013), put-forth that in the intermediate size range that is between (\$10 to \$200 million total assets), modest economies of scale are still evident, thereby inducing banks to increase their size and hence achieve increased profit.

For the larger banks that is over (\$200 million in assets), there is a substantial disagreement over the extent of economies of scale. Large banks between the ranges of (\$10-to-200 million) in assets might compete in the same market in cases where the rate of decrease in marginal costs is relatively small.

Kenya has faced a significant increase in the profitability of commercial banks. That has been as a result of adoption and use of banking technologies, changing customer needs and stiff competition. Kamau (2014) indicated that increasing profitability of banks was as a result of increased access to financial services to customers, efficiency and financial innovation impacted positively on the bank's performance. Al-Qudah and Jaradat (2013) studied the impact of the size of banks on their profitability. The research revealed that increase profitability measured by

return on assets and profitability occurred as a result of an increase in the number of financial services offered to customers.

Increased services offered to customers led to increased revenue and profitability of banks. One major challenge in the economy is that some banks, especially the smaller ones have been troubled including being closed and halted temporarily because of their inability to meet the regulator's liquidity requirements. However, some bigger banks, like Chase bank halted its operations for several months in 2016 when it was closed indefinitely for inability to meet overnight liquidity levels as demanded by the regulator. One notable thing is that the troubled banks tend poor performance (Charlene, 2005). The question that begs for an answer is whether it is good for an economy to have a few large banks or many banks including the smaller ones. The key issue is whether size is a guarantee to performance as measured by their profitability.

Statement of the Problem

The Kenyan banking sector has experienced growth in especially in terms of the players in the sector. While some foreign banks have joined the sector, some locally started savings and credit cooperative societies (SACCOS) have slowly found their way into banking (CBK, 2016). The point of concern is that smaller banks and banking institutions have had the challenge to meet regulatory requirements especially the requirement of liquidity level. There has been a feeling that, the smaller banks are troubled because they are both inefficient and they cannot compete with the large banks. With the increased regulation on deposit levels failure to attain reasonably enough profits, which is a crucial measure of performance of a bank, the small banks will be in trouble with the regulator. The debate that is ongoing is how the sector can be sustained for Kenyans to obtain adequate financial services and products. Some suggest that smaller banks should merge to make them larger to compete (Njiru, 2015). The question that begs for an answer is whether bank size does influence the performance as measured by their profitability.

In the last three years, 2013-2016, fears over the health of the Kenyan banking industry have been experienced especially when three banks were put under receivership, Chase bank being the third after Dubai bank and Imperial bank. Central Bank of Kenya indicates that six large banks are controlling 49.9%, 16 medium banks controlling 41.7% and 21 small banks controlling 8.4% market share (CBK, 2016). The fact that some small banks have been in operation for a long time without moving to the higher tier has created concern on whether size has any relationship with profitability, with some industry experts hinting that smaller banks need to be removed from the industry, citing that the Kenyan economy has unnecessarily too many

banks. Also, following the capping of lending rates, banks, and industry experts project a difficult near future for the Kenyan banks. Thus, banks have to rethink how to grow their profits and meet the regulator's requirements.

Although studies have been done on the link between size and profitability of firms, limited focus has been given to commercial banks in Kenya (Khayongo, 2016). Furthermore, with the regulator's pressures on banks' liquidity, a debate on bank size and their performance has hence regenerated greater heat. Also, competition in the industry with the emergence of Mpesa and Airtel Money mobile transfers have become more intense, banks' profitability is bound to get affected (CBK, 2016). Therefore, this study sought to investigate the link between bank size and performance as measured by their profitability.

LITERATURE REVIEW

Theoretical Framework

This study was guided by the stakeholder theory and the agency theory. Stakeholder theory was put forward by Freeman (1984), and Friedman & Miles (2002) contributed on the importance of the firm to represent the needs of all stakeholders to achieve corporate goals. One way of generating sustainable profits for the firm is meeting the needs of the stakeholders. These stakeholders include customers, the community, the employees and the organization. Duckworth & Moore (2010) opine that for a firm to achieve sustainable profit, the firm should accommodate the various needs of the stakeholders. The firm has to cater for the needs of the community, the customer and its employees who make a valuable input in contributing towards the realization of the firm's goals and objectives. The importance of this theory is that the stakeholders are key players of the bank and the satisfaction of their needs is vital in the realization of corporate goals. Bank profitability has been linked with meeting the needs of the stakeholders. Friedman and Miles (2002) argue that firms that exhibit high profitability meet the needs of all their stakeholders. This means that banks need to establish a good relationship with its stakeholders to attain sustainable profitability. The stakeholder theory is relevant to this study because bank performance is an essential aspect that benefits diverse stakeholders. It is of primary importance that banks become profitable and successful in order to continue to provide value-adding services to various stakeholders including wealth creation for shareholders, safety for money for depositors, adequate financing for the borrower of funds, economic growth for the government, and CSR to the vulnerable general members of the society.

The agency theory was described in the work of Jensen and Meckling (1976), and is a management approach where the agent acts on behalf of the principal. The agent must ensure that the goals of the principal are realized (Duckworth & Moore, 2010). The agent has a

responsibility of balancing his interest and those of the principal. The agent, in this case, is the top management executives of the firm who have the responsibility of controlling the resources of the firm. According to Laffont & David (2008), the decisions and the actions taken by the agent has an effect on the overall firm including the principal. According to Shankmann (2009), top management executives should provide adequate support in terms of financial resources and facilities to ensure that employees and the entire firm work towards the set goals and targets, as this impact positively on financial performance. The firm consists of explicit and implicit contracts that integrate the top management executive and the other stakeholders who include the customers, the employees, and the trade unions. The agency theory insists on the importance of having synergy between the top management executives and the firm's stakeholders in working together towards set goals and objectives; this leads to sharing of ideas, knowledge, and information about strategies that contribute positively towards profitability. The top management is expected to make financial plans and decisions that will contribute positively towards improved profitability of the firm. Top management executive should involve their employees by considering their opinion in building a shared vision that unites and drives them towards achieving similar goals (Shankmann, 2009). This theory is relevant to this study because the goal to grow profits is quite interlinked with the goal to maximize the operational efficiency and effectiveness and hence to grow the resources of the company which in turn grows the shareholder wealth.

Empirical Review

According to Tariq and Usman (2014), bank deposits have a direct positive relationship with the profitability of a bank. Banks that have large deposits report higher levels of profitability compared to banks with low deposits. The high profitability is attributed to high interests generated from the fund lent out to customers from the deposits maintained by banks. Aladwan (2015) also asserts that bank despite have a direct positive relationship with the level of profitability of banks. Accordingly, an increase in the value of bank deposits leads to increased revenue generating activities for banks further enhancing their profit levels.

Ostadi and Monsef (2014) also found out that an increase in bank deposits leads to an increase in the profitability of banks. The research established that an increase in bank deposits led to an increase in bank capital. An increase in bank capital, in turn, created an opportunity for banks to generate more income through increased loan facilities among other services. Eventually, the banks experienced an increase in the level of profit. Therefore, an increase in deposits led to an increase in profit levels.

Gizaw et al. (2015) conducted a study on loan quality and its influence on profitability and the findings of the study revealed that loan quality has a direct positive relationship with the profitability of banks. High-quality loans bring forth higher levels of profits as compared to poor quality loans whereby the risk-level of customers receiving loans determines the quality of loan. Staikouras and Wood (2011) also did a study and found out that loan quality has a positive impact on the profitability of banks. The research established that the manner in which loans are managed has a significant influence on the profitability of banks. Loans are considered to be of high quality when they are extended to people with high credit rating. Such loans bring forth high levels of profit for the banks are compared to poor quality loans.

The reviewed literature shows that large firms are expected to exhibit a high rate of profitability. However, the literature shows that small firms tend to develop much faster as compared to larger firms. Smaller firms avoid investments that require huge financial resources, unlike larger firms that engage in risky investments that are long-term. This affects the level of liquidity of large firms while it might expose such firms to substantial financial losses. Smaller firms have a stable liquidity position and can quickly grasp opportunities that might increase their profitability in the short term. Further, it was observed that the theories that guide this study showed a mixed reaction on the relationship between firm size and profitability of commercial banks, the proponents and the critics of these theories show divergent and convergent views. They do not agree on the relationship between firm size and increase in profitability. While some find a positive relationship, others find a weak relationship, others negative relationship and others no relationship at all.

Conceptual Framework

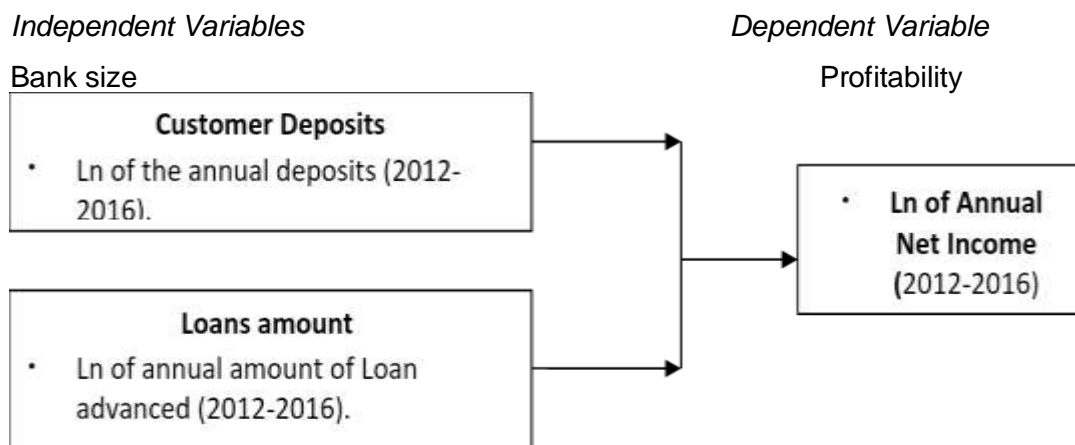


Figure 1: Conceptual Framework

Research Gap

Little concentration has been given on the link between bank size and profitability. In the advent of increased regulation of the Kenyan banking sector which culminated with the capping of lending and the ever increasing competition with the emergence of mobile phone transfer and lending services from Kenya's telecommunication rivals, Safaricom and Airtel, there is a need to establish factors that could contribute to higher profitability in banks. This study seeks to bridge this gap by attempting to establish the relationship between bank size and profitability of commercial banks in Kenya. More specifically, the study seeks to establish whether a large bank means more performance (profits).

RESEARCH METHODOLOGY

Research Design

The design used in this research was descriptive research design, which is a technique that enables the researchers to observe and describe the behavior of variables without influencing them (Kothari, 2005). The choice of this research design is because the researcher intends to establish the relationship between customer deposits and profitability of commercial banks, and loans and advances with the profitability of commercial banks. The researcher can also be able to relate the findings to the empirical findings and draw a plausible conclusion. The population for this study is all the 43 commercial banks licensed by Central Bank of Kenya, as at 31st of December, 2016. The study adopted a census study of all the 43 commercial banks in Kenya. The study used secondary data collection sheet to collect five-year period (2012-2016) data for each variable from the Central Bank of Kenya annual supervision reports. The study covered a period of five years (2012-2016) which was considered sufficient for establishing the relationship between the variables as they provided 215 (43 times 5year periods) data sets since the entire 43 commercial banks were used. The data was considered adequate for establishing the relationship between the regressors and the regressed.- To enhance accuracy and accessibility of data, the study reviewed all the commercial banks that were active for the past five years (2012-2016). Data was analyzed using the Statistical Package for the Social Sciences (SPSS, Version 23). The data was then tested for regression assumptions of normality, homoscedasticity, multi-collinearity and autocorrelation using the discrete statistics. The analysis was meant to establish the relationship between bank size and profitability. Bivariate regression analysis was used to evaluate the relationship between each set of stimulus variable and the response variable (Shevlin & Miles, 2010). Bivariate model was as shown as: $Y = \beta_0 + \beta_1 X_1 + \alpha$. Where x is the independent variable, y is the dependent variable and β_0 is the point of intersection where the line of best fit intersects while β is the angle of the line.

FINDINGS

Tests of Normality

The data were tested for normality using the Kolmogorov-Smirnov^a statistics (Table 1).

Table 1: Tests of Normality Results (Kolmogorov-Smirnov^a)

Statistic		Sig.
Customer deposit	0.227	0.000
Loan amounts	0.244	0.000
a. Lilliefors Significance Correction		

The null hypothesis being tested by the Kolmogorov-Smirnov^a statistics above is that the data points are normally distributed. The rule is that if significant value more than 0.05, the data is usually distributed. For the case of the data being investigated, both the K-S and Shapiro-Wilk statistics are less than 0.05 they all are 0.00, which indicates that the data sets being investigated are not normally distributed. Therefore, data need to be transformed before linear regressions can be done on the data.

For regression analysis, data should conform to the four assumptions of regression including normality, homoscedasticity, multicollinearity, and autocorrelation. Based on diagnostic tests above, the predictor variables, the tests indicate that the data sets had problems of multicollinearity, autocorrelation, and normality. The suggested solutions for such violations of assumptions of regression analysis are that the data should be transformed to their logarithmic values, inverse values, and percentages of a base number or by using their change. In this study, the data sets were transformed to logarithmic functions at base ten before regression analysis. Below are the results of the normality test using skewness and kurtosis for the data showing before and after transformation.

Table 2: Test for Normality Before and After Transformation

	Skewness Statistic	Std. Error	Kurtosis Statistic	Std. Error
Customer deposit	1.908	0.169	3.473	0.336
Loan amounts	2.122	0.169	4.834	0.336
ABDs_Lg10	-0.300	0.169	-0.105	0.336
AGBLs_Lg10	-0.317	0.169	0.116	0.336

If the two statistics are 0.00 or approximately 0.00, the data is said to be normally distributed. Before transformation, the skewness and kurtosis statistics were way larger than 0.00 as shown

in table 2 above. After transformation, the data behaves normal as the skewness statistics are near 0.00. Therefore, regression analysis can be conducted on the data.

Test for Auto-Correlation

To test for autocorrelation, Durbin-Watson statistic is widely used. The statistic lies between 0 and 4. When it is approximately 2.0, there is no autocorrelation..

Table 3: Test for Autocorrelation

Variable	Durbin-Watson (d-w)
Customer deposit	1.987
Loan amounts	1.946

The calculated d-w statistics were 1.987 and 1.946 for the customer deposit and loan amount. These two statistics are below the thresholds of 1.5 and 2.5. The conclusion was that there was no autocorrelation and hence the satisfactory test for independence.

Data Transformation and Analysis

For regression analysis, data should conform to the four assumptions of regression including normality, homoscedasticity, multicollinearity, and autocorrelation. Based on diagnostic tests above, the predictor variables, the tests indicate that the data sets had problems of multicollinearity, autocorrelation, and normality. The suggested solutions for such violations of assumptions of regression analysis are that the data should be transformed to their logarithmic values, inverse values, and percentages of a base number or by using their change. In this study, the data sets were transformed to logarithmic functions at base ten before regression analysis. Below are the results of the normality test using skewness and kurtosis for the data showing before and after transformation.

Table 4: Test for Normality Before and After Transformation

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Linearity Test

The linearity test was examined using Pearson correlations statistics matrix. Table 5 below shows the correlations matrix for the data.

Table 5: Pearson Correlations Matrix

		Annual bank deposits	Annual gross bank loan	Annual Net Income
Annual bank deposits	Pearson Correlation	1	.986**	.925
	Sig. (2-tailed)	.000	.000	.000
Annual gross bank loan	Pearson Correlation	.986**	1	.937**
	Sig. (2-tailed)	.000	.000	.000
Annual Net Income	Pearson Correlation	.925**	.937**	1
	Sig. (2-tailed)	.000	.000	.000

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

Regression Analysis

The regression analysis sought to determine the statistical significance of bank size as measured by gross bank loans and bank deposits on the institution's profitability. To determine that, regression analysis was conducted where the two measures of size were used as predictor variables. The variables that were statistically significant as informed by their p-value being less than alpha value of 0.05 were regressed alone. Any change in R-Square was noted. Their p-value was noted and change in R-Square as well. The rule of thumb in stepwise regressions is that a relationship exists if at least one of the regression coefficients is significant and Pearson correlation coefficient is significant.

Table 6: Model Summary and Coefficients

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.790 ^a	0.624	0.615	0.245

a. Predictors: (Constant), NOEs_Lg10, AOAs_Lg10, ABDs_Lg10, AGBLs_Lg10
b. Dependent Variable: Annual Net Income

Model	Standardized Coefficients		T	Sig.
	B	Beta		
(Constant)	-0.408		-8.767	0.000
ABDs_Lg10	0.719	0.122	1.102	0.272
AGBLs_Lg10	0.980	0.163	1.328	0.186
AOAs_Lg10	0.185	0.283	4.755	0.000
NOBs_Lg10	-0.643	-0.077	-0.657	0.512
NOEs_Lg10	0.266	0.385	2.608	0.010

Results indicate that the R-Square was 0.624 while R was 0.790 which indicates a positive moderately strong relationship between firm size and net income. However, the significant value indicates that the number of employees is statistically significant because their p-values are less than the alpha value of 0.05.

DISCUSSION OF RESULTS

Customer Deposits and Bank Profitability

The study results indicate that bank deposits have a positive relationship with bank profitability. That concurs with the study by Tariq and Usman (2014) who found that bank deposits have a direct positive relationship with bank profitability. That suggests that banks with larger deposits have higher chances of being profitable than those with low deposits. That makes sense because banks make a profit by lending the funds collected as deposits to borrowers at a higher interest than the one paid to depositors. The findings are consistent with the conclusions of Ostadi and Monsef (2014) who observed that an increase in deposits led to an increase in profitability. That could be explained by the fact that increases in funds for lending increased the firm's ability to generate more profits from loans.

Loans and Bank Profitability

The study established a positive relationship between aggregate advanced loan amounts and bank profitability. Interest income is a major contributor to the profitability of many commercial banks. However, Gizaw et al. (2015) highlight the importance of quality in contributing to the

bottom line. This can be explained by the fact that a high loan default rate adversely affects the profitability of the bank. Loan quality can be measured by different parameters including the level of non-performing loans and the allowance loan loss expense. Past studies have revealed that the quality of loans has a direct positive impact on the profitability of commercial banks. High levels of profitability are associated with high-quality loans while low-quality loans lead to low profitability. Research has also shown that poor credit risk rating leads to a poor assessment of customers' risk levels and hence poor quality loans.

CONCLUSION

According to the study results, the study concludes that firm size is a key predictor of financial performance. That makes sense, and specifically, this study has proved that size, as measured by bank deposits, can enhance profitability. However, other studies indicate that time deposits are costlier than call deposits. Also, the study concludes that gross loans advanced positively enhance the performance of a bank. Thus the more the loans a bank advances, the more the profits. That makes sense because the loans advanced generate interest income.

RECOMMENDATIONS

To the practitioners in the commercial banks in Kenya, it is advisable to pursue deposits, in particular, more call deposits than time deposits. It is a legal requirement to pay interest for time deposits demands. Thus, a bank with a relatively significant proportion of call deposits to time deposits has the advantage of having cheaper deposit hence fewer costs which imply higher profits. On loans, banks should aim to obtain as many loan advances as possible as long as they have deposits to lend to borrowers. However, ample evaluation of the applicants is critical to ensure loan quality to realize the profit from lending.

AREAS OF FURTHER RESEARCH

Future studies can focus on the influence of firm size on compliance with best practices. It would be of essence to evaluate conformance to regulations by firms depending on their size. Compliance to environmental and social sustainability agenda has become the key thing that is driving firm performance in recent years. Also, future studies can focus on the impact of regulations such as capping and politics on the profitability of Kenyan commercial banks. Documentation of how regulations, politics and other external factors in emerging economies such as Kenya can help to unravel the factors to watch out for and those that regulators should aim to tame so as not to adversely affect the banking sector's performance.

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