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EFFECT OF PROFITABILITY ON CAPITAL STRUCTURE CHOICE FOR COMMERCIAL BANKS OPERATING IN KENYA

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ABSTRACT

The purpose of the study was to explore the effect of profitability on capital structure choice for commercial banks operating in kenya. A correlational research design was used to measure the relationship between the firm profitability and the capital structure choice. The study used secondary data over the period 2004-2013 from 39 commercial banks' annual financial reports filed with the Central Bank of Kenya. The data was analysed using Statistical Package for Social Sciences (SPSS) using multiple linear regression models to test the relationship between the firm profitability and the capital structure choice (debt-equity ratio). The study found that firm profitability had significant effect on the capital structure choice and exhibited a negative and linear correlation with capital structure choice. The study further found that there was a significant moderating effect of ownership on the capital structure choice. The study recommended that future studies could extend these findings by seeking to; establish the effects of interest rate capping on credit access among commercial banks in Kenya, determine the role of financial supermarket model on the bank profitability in Kenya and explore the impact of mergers and acquisitions on the performance of commercial banks in Kenya.

Keywords: *Capital Structure, Weighted Average Cost of Capital, Profitability*

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INTRODUCTION

The primary objective of a firm is to maximize shareholders wealth. A firm can achieve this objective by making proper decisions on three key areas of financial management namely, financing, investment and distribution of earnings. Corporate managers therefore, have to make decisions on how identified profitable investments are to be financed. Firms can use internal or external sources to finance their investments. Internal sources include retained earnings while external sources basically refer to new borrowings or the issue of stock. Since it is often not feasible for firms to finance their activities purely from internal sources as these do not allow the transfer of finance over time, they often choose external sources for higher flexibility in terms of obtaining financial resources at different times and for various purposes. Thus the financing decision involves– the fraction of external finance to be borrowed and the fraction to be raised in the form of new equity.

Bank capital has been much in the news during the 2007-2009 global financial crisis. The crisis started in the United States of America (USA) and spread beyond the borders and shocks were felt across the world. Whereas the cause of the crisis was attributed to the US housing market, the effective response by banks and their resilience depended on the adequacy and quality (debt-equity mix) of their capital. When examining the roots of the crisis, find that banks' active management of their capital structures in relation to internal value at risk, rather than regulatory constraints, is a critical factor.

Commercial banks in Kenya play a major role of contributing to economic growth of the country by mobilizing funds for investments. The banking sector in Kenya was liberalized in 1995 and exchange controls lifted. Commercial banks in Kenya have during the study period, 2004 – 2013 been going through transformation to cope with the constantly changing business environment, increasing domestic and global competition, economic downturn, rapidly changing market trends and volatile financial markets. Commercial banks in Kenya have also had to remain responsive to on-going developments in both the domestic and international environment. According to the Central Bank of Kenya Annual Report for 2013 changes in the banks' operating environment are driven by first; the entrenchment of devolution in Kenya where the banking sector is expected to revamp its infrastructure to meet the needs of the market both nationally and within the counties. Secondly, the advance in information and communication technology where continuing advances in and deployment of information and communication technology in the banking sector is impacting on the sector's operating efficiency and capacity. Thirdly, by the regional integration which is expected to impact the sector both strategically, legally and operationally as more institutions seek to expand their global footprint within the East African region and beyond.

Capital structure theories have to a large extent been derived from prior work on the capital structure of industrial firms. According to Diamond and Rajan (2000) commercial banks and their assets and functions are materially different from other industries. MacKay and Phillips (2005) and Miao (2005) find that a firm's debt-equity mix depends on its industry. Banks are profit-making institutions and managed with the aim of generating wealth for their shareholders. According to Diamond and Rajan (2001) banks play a crucial role in a country's economy; they are deposit-taking institutions and act as the custodians of the public's money. Banks provide loan finance to clients and trade in various types of assets. They are the transmission mechanism for monetary policy and providers of other specialized functions, such as trading in foreign currencies.

This study examined the effect of profitability on the capital structure choice for commercial banks

operating in Kenya and extended empirical work on the capital structure theory.

Statement of the Problem

Banks operating in Kenya, have in the recent past been going through tremendous expansion both within and beyond the borders. According to the Central Bank of Kenya Annual Report of 2011, this phenomenon has been occasioned by their desire to extend their market frontiers in search of profits and growth. The banks have had to source for huge sums of finances to fund their expansion programs including new product developments. According to the same report there has also been a significant move by these banks to modernize their information technology systems in order to meet the ever changing and dynamic consumer needs. This too meant that the banks have had to raise substantial amounts of finances to fund these modernization programs. A review of the sources of financing chosen by these banks over the period 2007 to 2011 indicate a mixture of preferred source comprising of debt and equity. The study attempts to document the factors that influence the choice of capital among the banks listed on the Nairobi Securities Exchange. In recent years, a number of theories have been proposed to explain the variation in debt-equity ratios across firms. The theories suggest that firms select capital structures depending on attributes that determine the various costs and benefits associated with debt and equity financing. The purpose of this study was therefore to identify the influence profitability on the choice of capital structure among the banks listed on the Nairobi Securities Exchange and extend empirical work on capital structure theory.

Objective of the Study

The objective of this study was to examine the effect of profitability on capital structure choice for commercial banks operating in Kenya.

Hypothesis

To achieve the objectives of this study the following hypothesis concerning the effects of profitability on capital structure choice for commercial banks operating in Kenya were tested.

H_0: There is no relationship between profitability and capital structure choice for commercial banks operating in Kenya.

LITERATURE REVIEW

Atrill (2009) supports the traditionalist view that the cost of debt capital is cheaper than the cost of equity finance due to the tax benefits of debt. These benefits, which make the real cost of debt lower than equity, result in a firm reducing its overall cost of capital if it were to increase its levels of borrowing. Traditional optimal capital structure theories posit that the optimal level of debt is where the marginal benefit of a source of capital is equal to its marginal cost. Thus firms trade off the benefits and costs of debt and equity financing and find an “optimal” capital structure after accounting for market imperfections such as taxes, bankruptcy costs and agency costs. The focus of this theory is on debt and its proponents aver that the aim of a value maximizing manager should be to equate the marginal costs and marginal benefits of a debt and operate at the optimal level.

Pecking Order Theory

Myers (1984) argues that a firm will generally choose to finance an investment with internal funds such as retained earnings first, followed by new debt and finally with new equity. According to the pecking order theory, a firm may not have a target capital structure and its capital structure is as a result of a series of short-term financing choices viewed over the long-term. The short-term financing choices involve deciding which item on the pecking order is more desirable at a particular point in time. According to Ross, Westerfield, Jaffe and Jordan (2008) highly profitable firms make less use of debt as they are most likely to have large retained earnings

and their need for external financing is limited or minimal. As the pecking order theory is based on the costs of obtaining financing, it stands to reason that the marginal costs of financing new projects does not become an issue if the financial capacity were available in advance to fund future projects. Firms will be able to make use of funds immediately available to pursue opportunities when they arise rather than waste time and cost in approaching the capital markets.

Empirical Review

The existence of a relationship between firm profitability and capital structure can be explained in terms of the pecking order theory (Abor & Biekpe, 2005). The theory postulates that because of information asymmetry between insiders and outsiders, firms prefer to finance their capital projects using internal funds rather than external finance (Cheng & Shiu, 2007). Availability of internal funds depends on profitability as well as liquidity (Mazur, 2007). According to Mazur (2007) profitable firms are more likely to generate internal funds and it is expected that firm debt-equity ratio would decrease due to profitability – affirming the pecking order hypothesis of a negative correlation between profitability and debt-equity ratio. Profitable firms with access to retained profits can use them to finance their investments as opposed to depending on outside sources (debt). Murinde et al. (2004) observe that retentions are the principal source of internal finances. Titman and Wessels (1988) and Barton et al. (1989) agree that firms with high profit rates, all things being equal, would maintain relatively lower debt-equity ratios since they are able to generate such funds from internal sources.

Bevan and Danbolt (2004) find profitability to be negatively related to a firm's debt-equity ratio. This supports Myers (1977) pecking order theory that profitable firms will tend to use less of external finances. Their study suggests strong negative relationship between debt financing and profitability. Myers (1977) argues that firms prefer raising capital, first from retained earnings, second from debt, and third from issuing new equity. The study suggests that this behaviour may be due to the costs of issuing new equity. These can be the costs that arise because of asymmetric information, or they can be mere transaction costs. In either case, the past profitability of a firm, and hence the amount of earnings available to be retained, would arguably be an important determinant of its current capital structure. Profitability has a negative correlation with debt-equity ratio, consistent with the pecking order theory. Profitable firms accumulate more internal funds and hence use less debt finance. According to Ross *et al*., (2008) a profitable firm is most likely to have large retained earnings and its need for external financing is minimal and hence highly profitable firms make less use of debt.

Capital structure theories have different views on the relationship between debt-equity ratio and profitability. Myers (1984) argues that firms would generally take more debts for tax benefits. Profitable firms would, therefore, employ more debt because increased debt would increase the value of their debt tax shield (Myers, 1984). In addition to the tax advantage of debt, agency and bankruptcy costs may encourage highly profitable firms to have more debt in their capital structure. This is because highly profitable firms are less likely to be subject to bankruptcy risk because of their increased ability to meet debt repayment obligations. Firms would therefore demand more debt to maximize their tax shield at more attractive costs of debt. For these considerations, the trade-off theory predicts a positive relationship between debt-equity ratio and profitability. Linking profitability to the static trade-off theory, Cheng and Shui (2007) find that more profitable firms use more debt as they have better ability to take on debt. High debt levels attract tax

shields, implying a positive relationship between profitability and debt (Mazur, 2007).

The pecking order theory of Myers and Majluf (1984) predicts the opposite. It predicts a negative association between debt-equity ratio and profitability because high profitable firms will be able to generate more funds through retained earnings and then have less debt. It is therefore expected that there will be a negative relationship between profitability and debt-equity ratio. Kyereboah-Coleman (2007) bases the inverse relationship between debt-equity ratio and profitability on the theory of agency cost which compels managers to be disciplined when considering debt and emphasizes the importance of shareholders' wealth.

METHODOLOGY

This study used a correlational research design which is basically concerned with assessing relationships among variables. Correlation is a measure that indicates how one variable, factor or attribute varies in relation to another. The variation could be negative or positive. The target population for this study comprised of 43 commercial banks which were the total number of commercial banks that were operating in Kenya over the study period 2004-2013.

The secondary data used in this study was obtained from the annual financial statements of the 39 commercial banks operating in Kenya over the period 2004 to 2013. The dataset was based on financial data collected from the statements of financial position (balance sheets) and statements of comprehensive income (income statements) of commercial banks in Kenya.

A multiple linear regression model was used to determine the relative importance the variable in influencing the choice of capital structure for commercial banks operating in Kenya represented by debt-equity ratio. The overall measurement model without of ownership was as specified below;

$Y = \beta_0 + \beta_1 X_1 + \varepsilon$ .....

Where; Y = Capital Structure Choice (CAPSTR)

X_4 = Profitability of a bank (PROF), and

ε = Error term

FINDINGS

Pearson Correlation Coefficient between Profitability and Capital Structure

The study determined the correlation between profitability and the capital structure choice for commercial banks operating in Kenya. PCC results as indicated in Table 1 below were generated to derive the conclusion. The findings in this study indicated that there is a positive and significant 0.931 correlation between profitability and capital structure choice for commercial banks operating in Kenya. The strong and positive linear relationship between profitability and capital structure is more so significant given the p value equal to 0.000 is less than 0.05 confidence interval.

Table 1: Pearson Correlation Results on Profitability

	Profitability	Capital Structure
Profitability	1	
Capital Structure	0.931	1
Sig.	0.000	

Regression Analysis between Profitability and Capital Structure

To establish the relationship between profitability and capital structure, a linear regression analysis was ran generating a scatter plot diagram and the line of best fit as shown in figure 1 below.

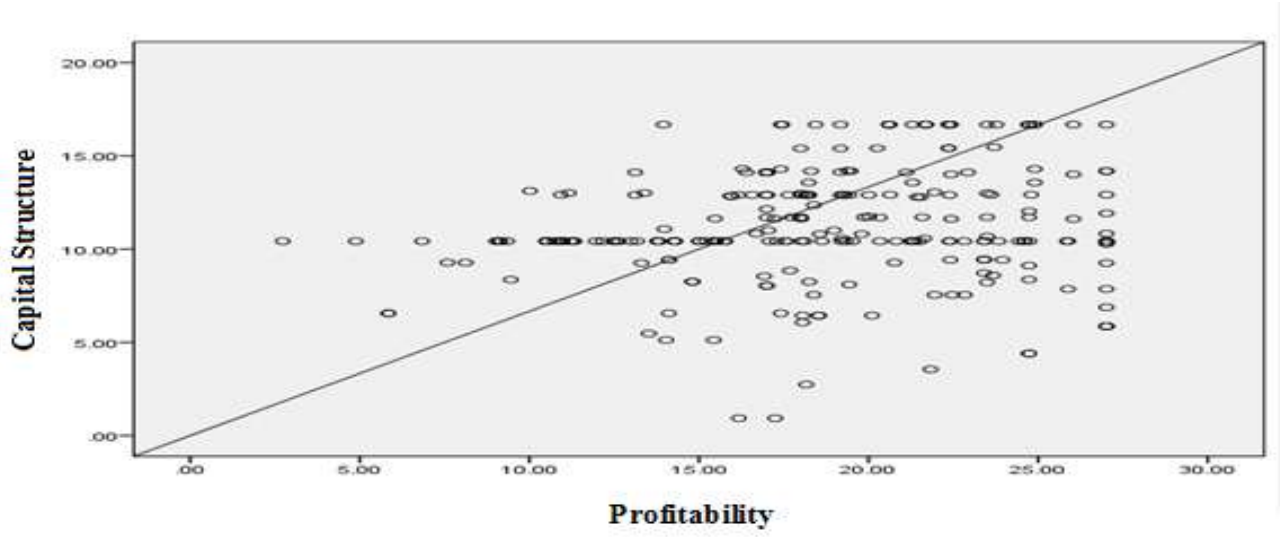

Figure 1: Scatter Plots of Profitability and Capital Structure

From the scatter plots in Figure 1, the study depicted a linear positive relationship between profitability and capital structure choice for commercial banks operating in Kenya. This suggested that growth of bank capital structure choice is propelled by positive changes in bank profitability. A line of best fit on the scatter plots further demonstrates a predictive accuracy of the model on profitability against bank capital structure choice. From Figure 1 above, it was observed that there was positive and linear correlation between profitability and capital structure choice for commercial banks operating in Kenya.

The regression model was as presented in equation (1) below.

$CAPSTR=\beta_0 + \beta_4 PROF + \varepsilon$…….. Equation (1)

Where;

CAPSTR = Capital Structure

β_0= Constant term associated with the regression model,

β_4= Coefficient of independent variable, Profitability

ε= Error term associated with the regression model

PROF= Profitability, independent variable

The relationship between profitability and capital structure choice was examined by testing the research hypothesis which stated that:

H_0: There is no relationship between bank profitability and capital structure choice for commercial banks operating in Kenya.

Using linear regression analysis, the study proceeded to determine the relationship between profitability and capital structure choice. A model summary Table 2 results comprising of the coefficient of correlation and the coefficient of determination, R^2 was generated. From the model summary table the coefficient of determination, R^2 for the model was 86.7% while the R value was 0.931. These values indicated that profitability greatly explained the variations in capital structure choice for commercial banks operating in Kenya with only 13.3% of the variations being explained by other variables not included in the model.

Table 2:Model Summary

Indicator	Value
R	0.931
R Square	0.867
Sig.	0.000

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The study further examined the effect of profitability on capital structure choice for commercial banks operating in Kenya by generating ANOVA output results as shown in Table 3 to determine whether the regression model significantly predicts the outcome variable. The ANOVA results generated as indicated by F statistics equal to 40.982 was statistically significant because the p-value of .000 was less than 0.05 confidence interval. This implied that, statistically, the model applied significantly in predicting the capital structure choice for commercial banks operating in Kenya.

Table 3 :ANOVA Statistics

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.503	1	20.503	40.982	.000[b]
	Residual	111.081	6	18.513		
	Total	131.644	7			

The study further generated Beta coefficients results as represented in Table 4 below which showed that the relationship between capital structure choice and profitability is statistically significant given the p value equal to 0.000 was less than 0.05 confidence interval. The positive coefficient in profitability implied that component of capital structure for commercial banks operating in Kenya was determined by profitability and both move in the same direction. The positive beta implies that a 1 unit increase in profitability leads to 10.261 units increase in capital structure.

Table 4: Coefficients of Profitability

Variable	B	Std. Error	T	Sig.
Constant	2.956	0.810	3.649	0.000
Profitability	10.261	4. 315	2.378	0.000

Figure 2 showed a histogram of standardized residuals. A visual examination of the histogram suggests a positive skewness of the standardized residuals. As indicated by the statistics at the legend, the residuals had a standard deviation of 1 and a mean of zero as of a standard normal distribution implying the model yields a normal distribution giving normally distributed values. The pattern shown below indicated no problems with the assumption that the residuals were normally distributed at each level of Y and constant in variance across levels of Y and hence the assumptions underlying the model used in this study had not been violated.

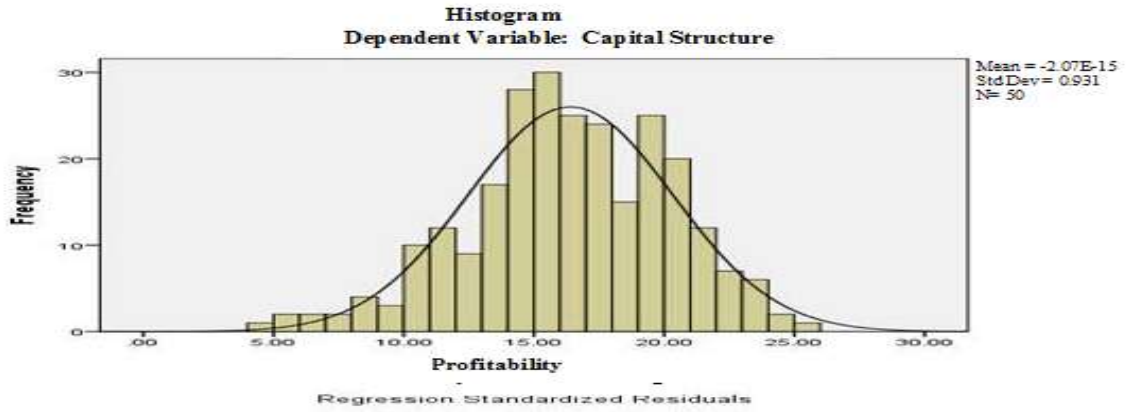

Figure 2: Histogram of Profitability and Capital Structure

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Model Prediction

The study further evaluated the study model based on the results presented table after establishing that there existed a relationship between profitability and capital structure choice. An R^2 = 0.931 implied that the profitability model explained 93.1 % of the variations of capital structure of commercial banks in Kenya. The fitted model was summarized in equation 2 below;

CAPSTR = 2.956 + 10.261PROF…… (Equation 2)

The results from the research findings demonstrated that profitability affects capital structure choice for commercial banks in Kenya hence we fail to accept the research hypothesis that there is no relationship between profitability and capital structure choice for commercial banks operating in Kenya and conclude that there is a significant relationship between profitability and capital structure choice for commercial banks operating in Kenya.

The findings of this study were corroborated by a number of previous studies on capital structure in firms among them; the trade-off theory by Myers (1984) which posit that firms generally prefer debt for tax considerations. Profitable firms would, therefore, employ more debt because increased debt would increase the value of their debt tax shield. High debt levels attract high tax shields, implying a positive relationship between profitability and debt (Mazur, 2007). Further findings by Cheng and Shui (2007) are also in agreement with this study that more profitable firms use more debt as they have better ability to take on debt.

There are, however, a number of studies which disagreed with the findings in this study among them; Murinde et al. (2004) who observe that retentions are the principal source of internal finance and hence profitable firms take less debt with Titman and Wessels (1988) and Barton et al. (1989) agreeing that firms with high profit rates, all things being equal, would maintain relatively lower debt-equity ratios since they are able to generate such funds from internal sources. The pecking order theory of Myers and Majluf (1984) predicts similar results of a negative association between debt-equity ratio and profitability because high profitable firms will be able to generate more funds through retained earnings and then have less debt.

CONCLUSION AND RECOMMENDATIONS

The positive Beta coefficient of the profitability equal to 10.261 implied that profitability and capital structure move in the same direction and that 1 unit increase in profitability value leads to 10.261 increase in capital structure choice. The regression model fitted in this study to establish the relationship between profitability and capital structure choice, statistically, predicted the capital structure composition significantly well. The study hence failed to accept the null hypothesis; H_0*:* There is no relationship between bank profitability and capital structure choice for commercial banks operating in Kenya at 95% confidence level, meaning there was significant relationship between profitability and capital structure choice.

Profitability was found to have a positive correlation with capital structure. Commercial banks need to devise effective strategies to maximize the banks' profits given that highly profitable banks are able to attract variety of capital sources both internally from accumulated retained earnings as well as statutory reserves as well as external sources like debts. Highly profitable banks are able to crowd in various forms of investors like debt providers at competitive prices. For low profitable firms, investors lose confidence on their earnings and may withdraw their investments while profitable banks attract long term and possibly convertible debts critical in any capital structure. Cost minimization through proper utilization of available resources, adherence to budget vote heads, innovation driven by technology to enhance efficiency, management of cost of deposits as well as

quality loan book management driven by performance management will enable the banks grow the profits making raising of capital favourable.

Areas for Further Research

These include areas such as to; establish the effects of interest rate capping on credit access among commercial banks in Kenya, determine the role of financial supermarket model on the bank profitability in Kenya and explore the impact of mergers and acquisitions on the performance of commercial banks in Kenya.

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