

**EFFECT OF CAPITAL STRUCTURE ON FINANCIAL  
PERFORMANCE OF COMMERCIAL BANKS IN KENYA  
A CASE STUDY OF FAMILY BANK KENYA LTD**

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## DECLARATION

I, the undersigned, declare that this is my original work and has not been presented to any institution or university other than the University of Nairobi for examination.

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## **DEDICATION**

I dedicate this research proposal to my late dad James Ombuoro Okelo and my family for all the inspiration and encouragement to succeed and providing the space and time to complete this work.

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## **Abstract**

The study was to establish the effect of capital structure on the financial performance of Family Bank Kenya Ltd for the 11 years period from the year 2010 to 2020. The study used Returns on Total Assets (ROA) and Returns on Shareholders' Equity (ROE) as financial performance variables while Short-term Outstanding Debts to Total Assets (SOD/TA), Long-term Outstanding Debts to Total Assets (LOD/TA) and Total Debts to Total Assets (TOD/TA) as the capital structure variables. Secondary data was collected from the audited financial statements of the bank which were available from the website. The data was analysed using SPSS version 22 and Microsoft Excel to determine the suitability of the data for regression analysis and other parametric tests. The data was found to have met all the requirements for regression analysis. The study found that capital structure positively and significantly impacted financial performance of Family Bank Kenya Ltd. The regression analysis on the effect of capital structure on ROA and ROE indicated that collectively all the independent variables had a  $R^2$  of 75% and 77% respectively. Collectively the capital structure variables positively and significantly affected the ROA and ROE as per the ANOVA table with a p-value of 0.017 and 0.013 respectively. The t-statistic revealed that only one independent variable TOD/TA positively and significantly contributed a unique variance at a p-value of 0.022 for ROA and p-value of 0.024 for ROE. The other independent variables SOD/TA and LOD/TA negatively and insignificantly affected financial performance as represented by ROA and ROE.



# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

The capital structure of a business entity is denoted as the relative proportions of borrowed and shareholders' financing (Miglo, 2016). By affecting risk and return, capital structure can impact the value of a company (Gitman & Zutler, 2012). Capital structure decisions being financing decisions are linked to the investment decisions which affects the financial performance and entity value (Kent Baker & Martin, 2011). A company's financial performance is directly impacted through the total cost of capital which is influenced by the capital structure (Kent Baker & Martin, 2011).

The landmark paper by Modigliani and Miller in 1958 on the subject of capital structure set off the development of the theoretical framework on capital structure. Their 1958 theory postulated the idea that in a market without imperfections, capital structure has no relevance as it does not create new value nor impact the cash flows of a company but only redistributes the value. In 1963, Modigliani and Miller paper on capital structure was a correction on the how corporate taxes impact the cost of capital and cash flows by introducing tax as a market friction and the paper proposed that debt financing provides a tax shield which can increase the cash flows available to the company and its value. Kraus and Litzenberger (1973) static trade-off theory recognized bankruptcy and financial distress costs as a market friction that has to be traded-off with the benefits of a tax-shield from debt finance to arrive at the optimal capital structure for an entity. Pecking Order Theory by Myers and Majluf in 1984 provides that companies, due to asymmetric information, will finance their value adding projects in a certain order which is preceded by internal financing, debt and lastly equity.

In the year 2020, Kenya had 39 commercial banks of which 22 were local and 17 foreign (Central Bank of Kenya, 2021). Total capital and reserves for the commercial banks in the year 2020 increased by Ksh.78.64 billion from Ksh.729 billion in 2019 to Ksh.807 billion in 2020 which was a 10.8% increase (Central Bank of Kenya, 2021). The additional capital and reserves were derived mainly from capital injections and

retained earnings (Central Bank of Kenya, 2021). Financial performance of commercial banks declined by Ksh.46.9 billion in the year 2020 from Ksh.159 billion in 2019 to Ksh.112 billion in 2020 which was a 29.5% decrease in profit before tax attributed to a Ksh.46.93 billion net increase in expenses over income in the year 2020 (Central Bank of Kenya, 2021). A global balance sheet analysis of the commercial banking sector in Kenya in 2020 shows that customer deposits at Ksh.4.01 trillion was 74.2% of the total liabilities and shareholder funds while capital and reserves at Ksh.807.5 billion was only 14.9% of the total liabilities and shareholder funds (Central Bank of Kenya, 2021).

### **1.1.1 Capital Structure**

A business entity's capital structure will always be denoted as the relative proportions of borrowed and shareholders' financing. (Miglo, 2016). By affecting risk and return, capital structure can impact the value of a company (Gitman & Zutler, 2012). Capital structure decisions being financing decisions are linked to the investment decisions which affects the financial performance and entity value (Kent Baker & Martin, 2011). I would define capital structure as a company's relative allocations of borrowed and shareholders' funds that it utilizes to finance its value maximizing positive cash flow generating investment activities.

A firm's capital structure would typically have both equity and debt financing. Equity would be represented by the share capital and reserves. Debt financing is either short-term or long-term and would be sourced from commercial banks loans or the capital market through issuance of bonds or commercial papers. In the year 2020, the Kenyan banking sector had customer deposits which are short-term funds at Ksh.4.01 trillion representing 74.2% of the total capital structure, capital and reserves at Ksh.807.5 billion representing 14.9% and other liabilities like bonds at 10.9% (Central Bank of Kenya, 2021).

Capital structure as the independent variable was computed by dividing Total Outstanding Debts with Total Assets (TOD/TA), Long-term Outstanding Debts with Total Assets (LOD/TA) and Short-term Outstanding Debts with Total Assets (SOD/TA).

### **1.1.2 Financial Performance**

A company's financial performance is an accounting computation and is expressed as the excess of revenue over expenditure. Financial performance is measured using ratio analysis to assess managerial effectiveness in utilizing the assets and shareholders' funds in generating the profits (Kent Baker & Martin, 2011). The measures normally used are Returns on Total Assets (ROA) which weighs the managerial effectiveness in the use of assets to generate profits and Returns on Shareholders' Equity (ROE) which is the proportion of net earnings divided by the stockholders' interest in the bank (Gitman & Zutler, 2012). I would define financial performance as an accounting assessment of how management of an entity has been able to generate excess of income over expenditure through providing goods and services that meet customers' needs in an economical and profitable manner.

Financial performance is periodically assessed through the accounting income statement of a firm which matches a firm's income against its expenses and excess of income over expenses is denoted as net profit while a net loss would be when the expenses exceed the income. An income statement is prepared using established and universally adopted accounting principles or International Financial Reporting Standards (IFRS) and will typically tabulate all sources of income and the respective expenses incurred in generating the income. A typical bank income statement would show the main source of income as interest on loans and the major expense as the interest paid on deposits. Other incomes like fees on services provided make a small portion of the income (Central Bank of Kenya, 2021). In the year 2020, Kenya banks made a profit before tax of Ksh.112 billion from a total income of Ksh.576 billion representing a return of 19.45%. Of the total income, 48% was interest on loans while 25.9% was interest on government securities while interest expenses was 31.5% of the total expenses, bad debts was 23.8% and staff costs was 20.9% (Central Bank of Kenya, 2021).

Financial performance was assessed using Returns on Total Assets (ROA), and Returns on Shareholders' Equity (ROE). ROA is the after-tax earnings that is divided by the average of the total assets (Gitman & Zutler, 2012). ROE is the value of the net of tax income due to stockholders divided by the average stockholder's equity and retained earnings (Gitman & Zutler, 2012).

### **1.1.3 Capital Structure and Financial Performance**

Variables representing capital structure were determined by dividing Total Outstanding Debts with Total Assets (TOD/TA), Long-term Outstanding Debts with Total Assets (LOD/TA) and Short-term Outstanding Debts with Total Assets (SOD/TA). Financial performance was determined through the computation of Returns on Total Assets (ROA), and Returns on Shareholders' Equity (ROE) (Gitman & Zutler, 2012). Total Assets is the common denominator that features in the ratios defining capital structure and Returns on Total Assets (ROA) hence was a common determinant of capital structure's effect on financial performance.

### **1.1.4 Family Bank Kenya Ltd**

Family Bank Kenya Ltd started off in 1984 as Family Finance Building Society. Its initial focus was on farmers who were productive but had no access to financial services. Family Bank Ltd was licensed to operate as a commercial bank in the month of May 2007. The bank has experienced transformative growth in its branch network from one branch in 1984 to a network of 92 branches countrywide currently. The Bank's mission is to change people's lives by availing financial services anchored on innovative, efficient and sound practices. (Family Bank Kenya Ltd, 2021).

The Bank mantra of innovativeness has made it achieve milestones which include: the first bank in Kenya to introduce smart card-based banking teller services. In 2013, Family Bank reached a milestone Ksh.1 billion pre-tax profit mark for the first time since becoming a commercial bank. In 2014 it made Ksh.2.62 billion pre-tax profit which grew to Ksh.2.90 billion in 2015. With over 1.6 million customers, Family Bank is one of the emerging retail banks in the country. The bank's branch network is the fifth largest in Kenya (Family Bank Kenya Ltd, 2015).

To finance its tremendous growth and increase its market share further, Family Bank in September 2015 issued a Multi-Currency Medium Term Note to raise Ksh.10 billion. Nairobi Securities Exchange listed the note after approval by the regulator. The funds from the bond were to be used for branch network expansion and novel business channels, investment into ICT software and infrastructure upgrade, strengthening the total capital base and for regional markets entry financing.

Family Bank Ltd presents a very intriguing research subject considering its tremendous growth in profitability, the bank has not listed its shares despite meeting all the requirements for listing and has instead opted for trading its shares in the informal Over the Counter (OTC) market despite the existence of the Nairobi Securities Exchange formal OTC market called Unquoted Securities Platform. The bank has also opted to finance its growth through issuance of corporate bonds, loans and retained earnings.

In light of the foregoing uniqueness in the capital structure of Family Bank, the study sought to establish the effect of capital structure on the financial performance of Family Bank Ltd for the period 2010 to 2020.

## **1.2 Research Problem**

Many scholars locally, regionally and globally have researched on how capital structure affects the financial performance of commercial banks and have not had a clear consensus. Empirical studies done by Ali & Ali (2016), Nwaolisa & Chinelo (2017), Saeed et al (2013), and Serwadda (2019) arrived at a finding that capital structure positively and significantly impacted the financial performance of the banks. Adeoye & Olojede (2019), Gohar & Ur Rehman (2016), Majumder (2018), Ronoh & Ntoiti (2015), and Siddik et al (2017) in their studies determined that capital structure negatively impacted financial performance. Other studies done by Kuria (2013), and Ezenwakwelu (2018) found that significantly capital structure was not related to financial performance. Studies done by Al-Omari (2021), Mutua (2016), Kipesha & James (2014), Sivalingam & Kengatharan (2018), Allahham (2015), and Jadah et al (2020) concluded that the statistical significance of the capital structure's impact on financial performance is a composite one where a number of the capital structure variables are positively correlated while others are negatively correlated to financial performance.

Family Bank Kenya Ltd is public bank with a share capital of Ksh.1.287 billion. The shares are not listed in Nairobi Securities Exchange and instead are bought and sold in the informal Over the Counter (OTC) market. Family Bank issued a corporate bond in the capital market in 2016 and raised Ksh.2.0188 billion which was redeemed after five years in April 2021. In June 2021, Family Bank issued a second 5-year bond for Ksh.8 billion and has already raised Ksh.4.42 billion in the first tranche. Family Bank with a customer base of over 1.6 million, has had a steady positive growth in profitability at

for the last 5 years. Family Bank has grown its capital through retained earnings and is financing its growth through corporate bonds despite meeting all the requirements for listing its shares. These decisions Family Bank had made in the past on capital structure will be examined to establish their impact on financial performance.

Empirical studies on how capital structure affects the performance of commercial banks by Ali & Ali (2016), Nwaolisa & Chinelo (2017), Saeed et al (2013), and Serwadda (2019), Adeoye & Olojede (2019), Gohar & Ur Rehman (2016), Majumder (2018), and Siddik et al (2017), Ezenwakwelu (2018), Al-Omari (2021), Kipesha & James (2014), Sivalingam & Kengatharan (2018), Allahham (2015), and Jadah et al (2020) arrived at conflicting conclusions. Local studies by Ronoh & Ntoiti (2015), Kuria (2013) and Mutua (2016) were also at variance on capital structure effect on the performance of commercial banks. The foregoing empirical studies displayed the lack of consensus regarding capital structure impact on the financial performance of commercial banks. The research gap addressed in this study was a specific analysis of the impact of capital structure on financial performance of an unlisted public bank that has deliberately financed its capital structure through retained earnings, loans and corporate bonds. This study will seek an answer to the question: What is the relationship between capital structure and financial performance of Family Bank Kenya Ltd?

### **1.3 Research Objective**

The research objective is to examine capital structure relationship with the financial performance of Family Bank Kenya Ltd for the period 2010 to 2020.

### **1.4 Value of the Study**

The results of the study are anticipated to be of use to interested researchers, students of finance, and scholars who may wish to conduct further, similar or related studies. The study will be relevant to academic researchers and scholars who may identify gaps in this study to conduct further empirical studies on topics that are connected to this one.

The conclusions and findings will be an addition to empirical literature on the issues regarding capital structure of commercial banks which may benefit bank officers and directors by informing their financial decisions on capital structure that may optimize a bank's value.

Governments and regulatory bodies like Central Bank of Kenya will benefit from insights on policies that impact on financial performance of commercial banks.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter shall include major theories underpinning the study, empirical review of prior studies on this topic, a concise summary of the relevant literature reviewed, and a conceptual framework and model.

#### **2.2 Theoretical Framework**

In the theoretical framework, a review of relevant theories to the study will explain how the capital structure and financial performance variables relate. Theories covered include: Pecking Order Theory and Trade-off Theory.

##### **2.2.1 Pecking Order Theory**

In 1984 Myers and Majluf postulated the Pecking Order Theory. They stated that due to information asymmetry, issuance of new equity shares to finance value adding projects in a firm signal to investors that the equity shares market value is overstated. Firms tend to utilize financing sources that the markets will not undervalue hence for financing new projects there is a pecking order and retained earnings ranks highest, then external borrowings and shareholders' equity respectively.

Pecking Order Theory seems to provide some justification for the observed inverse relationship between borrowing and good financial results (Fama & French, 2002) as highly profitable firms tend to lean on their retained earnings for financing new profitable projects unlike firms experiencing lower profitability that tend to source their financing from the debt market. There is differing evidence on whether companies pursue a pure pecking order on capital structure and on whether asymmetrical information reduces the tendencies to issue equity (Miglo, 2016).

Family Bank has not floated its equity to the market but has instead grown its shareholders equity through retained earnings which in December 2020 was 44.8% of the shareholders' funds while the share capital was only 9.6% of the shareholders' funds. Family Bank issued a corporate bond in the capital market in 2016 and raised Ksh.2.0188 billion which was redeemed after five years in April 2021. In June 2021,



Family Bank issued a second 5-year bond for Ksh.8 billion and has already raised Ksh.4.42 billion in the first tranche.

### **2.2.2 Trade-off Theory**

In 1973 Kraus and Litzenberger proposed the static trade-off theory. The theory hypothesises that a business entity's capital structure manifests a trade-off between the financial benefits of a tax-shield from debt capital and the probable costs of financial embarrassment and bankruptcy. The ratio is determined at the level where the tax-deductible benefits of interest on debt capital trades-off against the debt default costs of financial embarrassment and bankruptcy.

According to Miglo (2016) Trade-off theory cannot explain why profitable firms that have more opportunity of utilizing debt tax-shields and lower bankruptcy risks have less debt. The inverse relationship between borrowing and good financial performance has been supported by empirical findings from studies done by Fama and French in 2002 and later Frank and Goyal in 2003. Firms owning more tangible assets have also been found to have more borrowings because of their high quality collateral as compared to firms with less tangible assets (Miglo, 2016). The foregoing factors limit the assertion that tax shields benefits alone can account for higher borrowing by companies.

A global balance sheet analysis of the commercial banking sector in Kenya in 2020 shows that customer deposits at Ksh.4.01 trillion was 74.2% of the total liabilities and shareholder funds while capital and reserves at Ksh.807.5 billion was only 14.9% of the total liabilities and shareholder funds (Central Bank of Kenya, 2021). Despite the benefits provided by tax-shield from debt financing, banks still prefer cheaper customer deposits. As at December 2020, Family Bank's total debt financing from a bond was Ksh.2.0188 billion compared to short-term liabilities of Ksh.75.19 billion.

## **2.3 Empirical Review**

### **2.3.1 Global Studies**

Saeed et al. (2013) did a study on 25 commercial banks in Pakistan. Period of study was 5 years (2007-2011). Multiple regression models were utilized. The study determined that capital structure was positively and significantly related to the performance of the banks (ROA, ROE & EPS) under study.

Gohar and Ur Rehman (2016) did a study on 21 Pakistani banks for the period 2009-2013. The study findings indicated a significant and negative impact of capital structure on the financial performance of the banks (ROA & EPS).

Siddik, Kabiraj, and Joghee (2017) undertook a study on 22 Bangladesh banks for the period 2005-2014. Their findings supported a negative conclusion on capital structure's effect on the banks' performance.

Nwaolisa and Chinelo (2017) did a study on 4 Nigerian banks for the period 2006-2015. Their findings supported the assertion that capital structure positively impacted financial performance.

Majumder (2018) did a study on 25 privately owned commercial banks in Bangladesh for the period 2008-2017. The findings conclusions were that a significantly negative influence of capital structure on the banks' financial performance was observed.

Adeoye & Olojede (2019) did a study on 10 Nigerian listed commercial banks. Period of study was 7 years (2012-2018). Capital structure was found to negatively affect financial performance (ROA and ROE).

### **2.3.2 Regional Studies**

Kipsha & James (2014) did a study on 38 banks in Tanzania. The study used panel data for 5 years period. The study found that debts to assets ratio had a significant positive impact on ROE.

Serwadda (2019) did a study on 20 banks in Uganda. The study used panel regression models for a 10 years period (2006-2015). Capital structure was determined to be positively affecting bank performance (ROE, ROA, NIM and cost to income ratio).

### **2.3.3 Local Studies**

Kuria (2013) did a study on 35 commercial banks in Kenya which covered the 5 years (2008-2012) period. Capital structure was determined to exhibit no significant relationship with financial performance.

Ronoh & Ntoiti (2015) conducted a study on KCB Bank and used panel data from financial and income statements covering the 5 year period (2009-2013). The study

found that capital structure is significant and affects listed commercial banks negatively.

Mutua (2016) did a study on 43 commercial banks in Kenya covering a 10 year period (2005-2014). The study established that a composite relationship existed with some variables like interbank borrowing and equity exhibiting positive and significant impact and other variables like short and long-term debts showing no significant impact on the banks' financial results.

## **2.4 Summary of the Literature Review**

Two major theories on capital structure have been reviewed to determine how capital structure decisions affect firm value and financial performance. Several empirical studies, global, regional and local have also been explored to establish how capital structure impacts financial performance.

The empirical studies highlighted disagreement by different scholars on the nature and extent of the effect of capital structure on the financial performance of commercial banks which presents a researchable gap that justifies this study. The research gap that this study intends to address empirically is whether capital structure really has an effect on financial performance of an unlisted public bank which has mainly financed its capital structure through retained earnings, loans and corporate bonds.

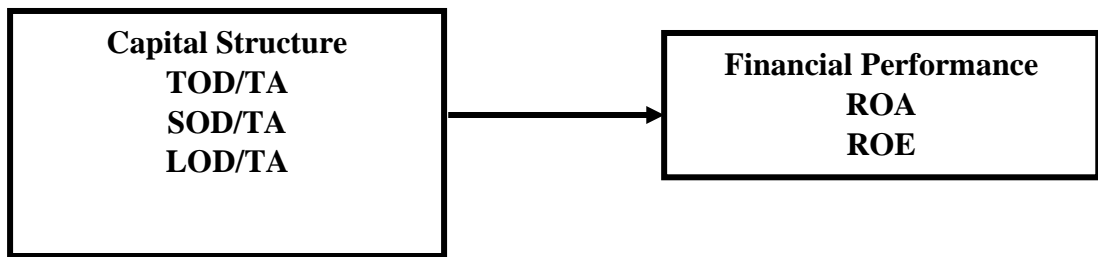
## **2.5 Conceptual Framework**

In this study capital structure was analysed by dividing Total Outstanding Debts with Total Assets (TOD/TA), Long-term Outstanding Debts with Total Assets (LOD/TA) and Short-term Outstanding Debts with Total Assets (SOD/TA). Financial performance was assessed by using the ratios: Returns on Total Assets (ROA), and Returns on Shareholders' Equity (ROE) (Gitman & Zutler, 2012).

A conceptual framework model was derived from the outcome of the analysis of empirical review and was crucial in providing answers to the research question.

**Independent Variable**

**Dependent Variable**



**Figure 1: Conceptual Model**

Source: Developed by Researcher (2021)

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

A research methodology guiding how the study will be undertaken was necessary to establish how the capital structure variables relate to the financial performance variables in the case study of Family Bank. The four sections of this chapter include: research design, study population, data collection, and data analysis.

#### **3.2 Research Design**

A research design provides a roadmap that guides the data collection, measurement and analysis to resolve the research questions (Sekaran & Bougie, 2016). A longitudinal research design was used to highlight the key characteristics of the data while multiple regression was used to delineate how the variables relate to each other. The design was appropriate for the study as it aided in uncovering the relationship among the variables under study (Cooper & Schindler, 2011).

#### **3.3 Data Collection**

Data required for the research was collected from secondary sources. The published annual audited financial statements of Family Bank for 11 years (2010-2020) which are a consolidation of the financial statements from all the bank branches provided the data required for the analysis. The audited financial statements were accessed from the bank's website and provided the data required to compute all the variables. Annual data from Statement of Financial Position and Income Statement were extracted and ratios computed for each variable. Other details of the data were collected from the notes to the financial statements which provided more details and breakdowns as required.

#### **3.4 Data Analysis**

Data and statistics from the audited financial statements was collected, ratios computed and analysed. Descriptive, correlation and regression analysis methods were used to establish the characteristics of the data and explain the relationship among the variables under study. Microsoft Excel was used to analyze the collected data and to compute all the ratios. SPSS version 22 was used to perform descriptive, correlation and regression

analysis of the data. The statistical analysis of the data provided insights on how capital structure relates with financial performance.

### **3.4.1 Data Quality Tests**

A data quality test was undertaken to determine if the data met all the assumptions for regression and other parametric analysis. The data was tested for normality, linearity, homoscedasticity, lack of autocorrelations, and no multicollinearity. These tests are crucial to ensure that the regression and other parametric test results produce a reliable model free of errors.

### **3.4.2 Analytical Model**

A regression analysis was conducted on the data to assess the significance of how capital structure relates to financial performance. The following model was used:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \epsilon$$

Where: Y = ROA or ROE

$\beta_0 = \text{Constant}$

$\beta_1, \beta_2, \beta_3$  are the slopes or coefficients of the regression

$X_1 = \text{Total Outstanding Debts/Total Assets (TOD/TA)}$

$X_2 = \text{Short-term Outstanding Debts/Total Assets (SOD/TA)}$

$X_3 = \text{Long-term Outstanding Debts/Total Assets (LOD/TA)}$

$\epsilon = \text{Error term}$

## **CHAPTER FOUR**

### **DATA ANALYSIS, RESULTS & DISCUSSIONS**

#### **4.1 Introduction**

The data collected was analysed and, in this chapter, will be presented in the form of tables to statistically analyze how capital structure relates with financial performance. The tools used in the analysis of data include descriptive and regression analysis. The results of the analysis will be discussed in this chapter.

#### **4.2 Descriptive Analysis**

The descriptive analysis will illustrate the mean, maximum, minimum, and the standard deviation of the variables data. Returns on Total Assets (ROA) minimum value was -0.015 or -1.5% and the maximum was 0.034 or 3.4% which was higher than the average ROA for Kenya Banks in 2019 while Returns on Shareholders' Equity (ROE) had a minimum value of -0.083 or -8.3% and a maximum of 0.227 or 22.7% with a higher risk of 0.0932 compared to ROA at 0.0144. The Short-term Outstanding Debts to Total Assets (SOD/TA) minimum value was 0.364 or 36.4% while the maximum value was 0.710 or 71% and it indicates how much the bank relies on demand deposits. The short-term deposits also had the highest risk at 0.0961. The Long-term Outstanding Debts to Total Assets (LOD/TA) lowest value was 0.019 or 1.9% and the highest was 0.121 or 12.1% which indicates the bank relied less on long-term debts for its funding. The Total Outstanding Debts to Total Assets (TOD/TA) minimum value was 0.754 or 75.4% and the maximum was 1.014 or 101.4%. This indicates the bank's maximum total outstanding debts exceeded the total assets exposing the bank to risks of financial instability.

**Table 1: Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	11	-.015	.034	.01596	.014379
ROE	11	-.083	.227	.10707	.093231
SOD/TA	11	.364	.710	.51418	.096082
LOD/TA	11	.019	.121	.06078	.033722
TOD/TA	11	.754	1.014	.91705	.084811
Valid N (listwise)	11				

**Source: Research Data (2021)**

### 4.3 Data Quality Tests

Regression analysis is premised on certain key assumptions which include:

1. Normality
2. Linearity
3. Homoscedasticity
4. Lack of autocorrelations
5. No multicollinearity

Tests to confirm that the key assumptions are critical in ensuring that data subjected to regression and other parametric tests meets the requirements.

#### 4.3.1 Normality test

Normality of data is a basic assumption for any regression and other parametric tests of data. Shapiro-Wilk test was used with the following Null and Alternative hypotheses:

$H_0$ : The variables data is normally distributed

$H_1$ : The variables data is not normally distributed.

Any variable showing a p-value > 0.05 will lead to not rejecting the Null hypothesis and will mean the variables data is normally distributed. Table 2 below indicates that all the study variables have a p-value higher than 0.05 confirming the data is normally distributed and hence will be useful in regression and other parametric analyses.



**Table 2: Normality Test**

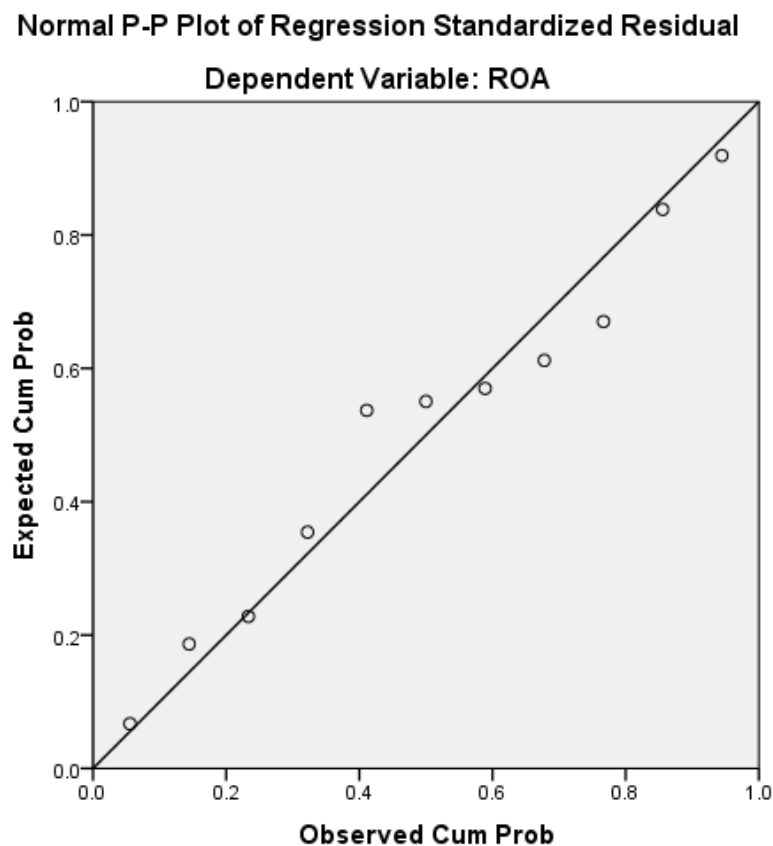
Variable	Shapiro-Wilk		
	Statistic	df	Sig.
ROA	.943	11	.562
ROE	.949	11	.625
SOD/TA	.958	11	.742
LOD/TA	.881	11	.107
TOD/TA	.911	11	.251

**Source: Research Data (2021)**

### 4.3.2 Linearity Test

Linearity refers to the data points clustering around a straight linear line indicating a relationship that is of a straight-line nature. This is done through a graphical plot and illustrated as indicated below:

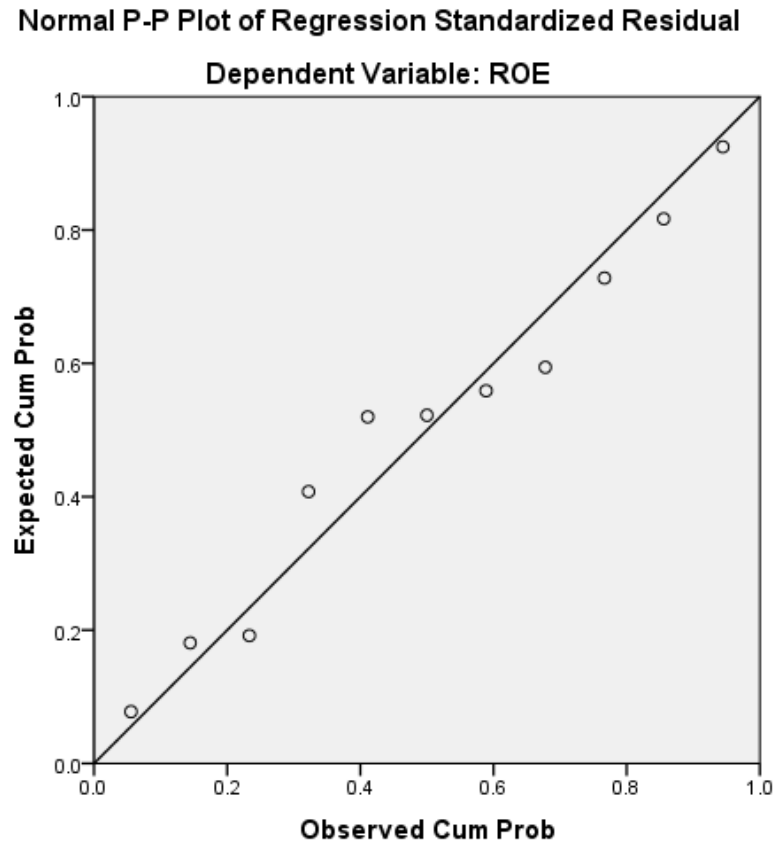
**Figure 2: ROA Linearity Test**



The above Figure 2 indicates that for ROA the data shows a linear relationship as the data plots cluster around a linear straight line. In Figure 3 below for ROE the data

shows a linear relationship as the data plots cluster around a linear straight line. The linearity test for the data has been successful and hence the data will be useful for regression analysis and modelling the results.

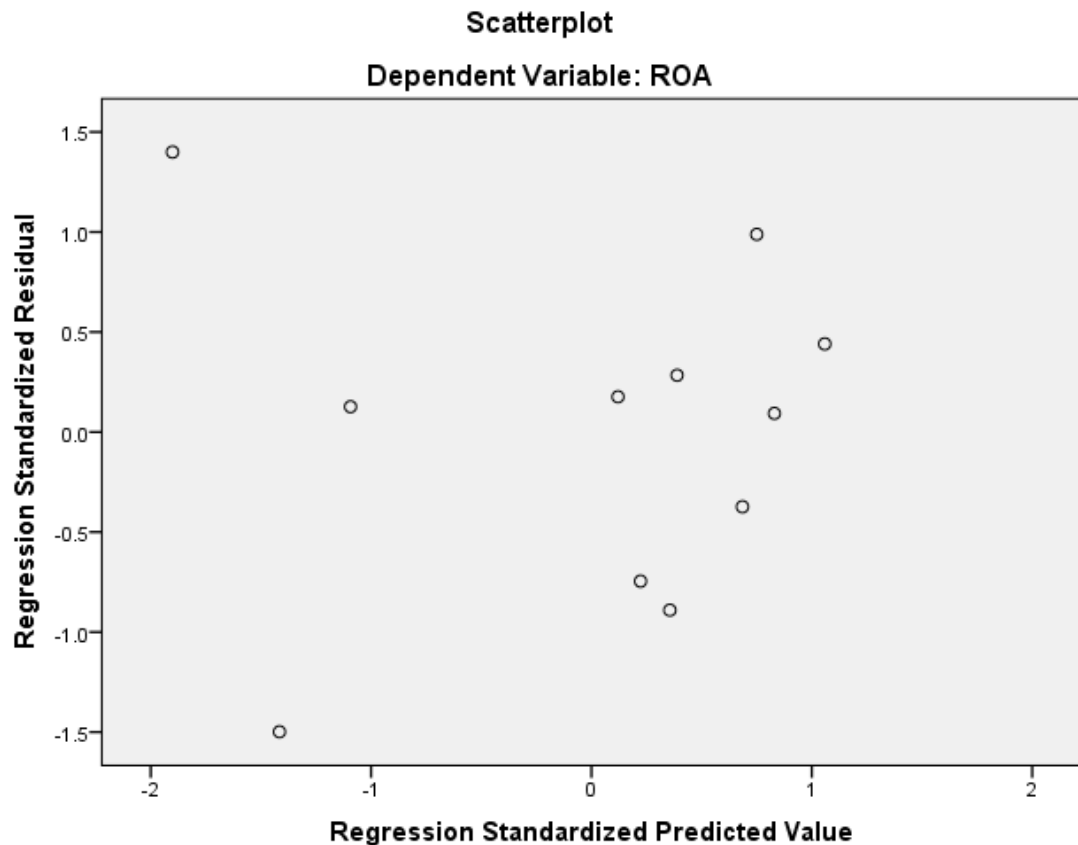
**Figure 3: ROE Linearity Test**



### 4.3.3 Homoscedasticity

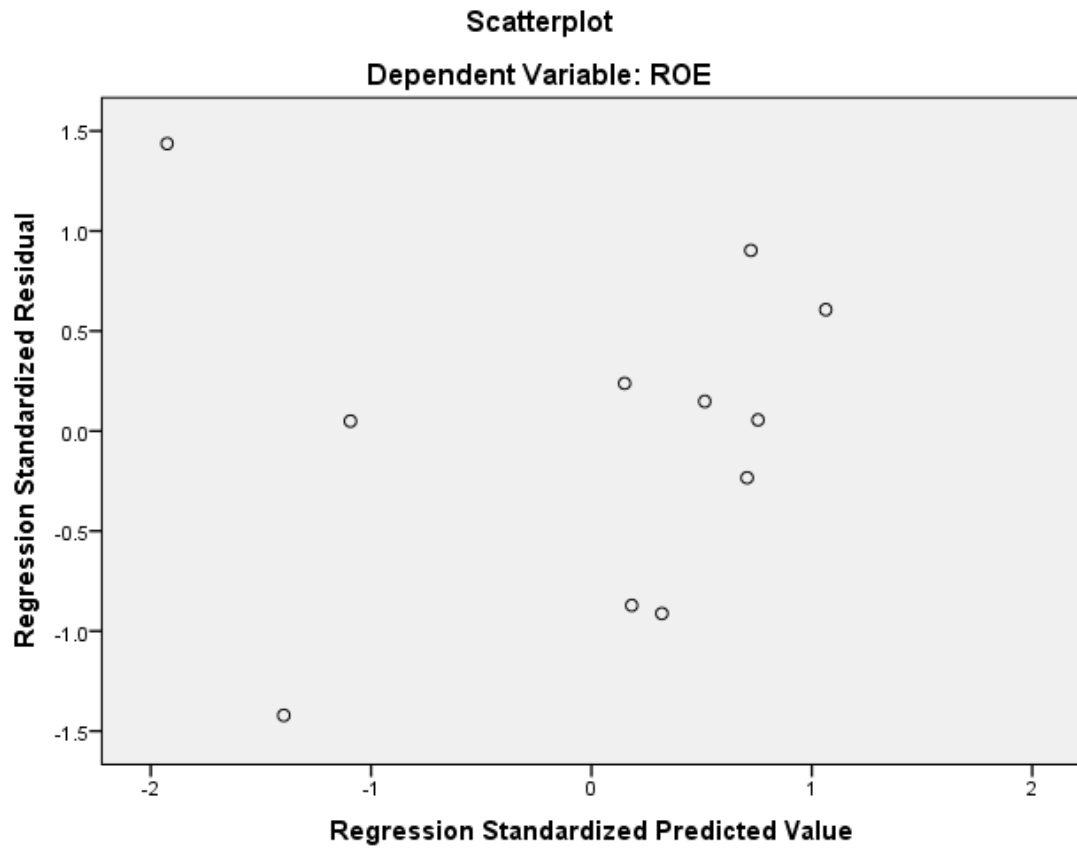
Homoscedasticity refers to data residuals that exhibit random distribution and no clustering at any point. This was tested through a scatterplot as indicated below:

**Figure 4: ROA Scatterplot**



The above Figure 4 scatterplot for ROA shows data plots that are randomly distributed and are not clustered at any point on the chart indicating compliance with homoscedasticity. In Figure 5 scatterplot for ROE, homoscedasticity is confirmed as the data points are randomly distributed and not clustered at any point on the chart.

**Figure 5: ROE Scatterplot**



#### **4.3.4 Lack of Autocorrelations**

Durbin-Watson test is used to test if the residuals or error terms are correlated. Durbin-Watson score of between 1.5 to 2.5 indicates no autocorrelation and figures closer to 2.0 are preferred. The model summaries for ROA in Table 3 and ROE in Table 4 as dependent variables indicates the Durbin-Watson scores as 2.205, and 2.058 respectively. This confirms lack of autocorrelations as the scores are between 1.5 and 2.5 and closer to 2.

**Table 3: ROA Durbin-Watson Test**

Model	R	R-Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.865 <sup>a</sup>	.748	.640	.008631	2.205

a. Predictors: (Constant), TOD/TA, LOD/TA, SOD/TA  
b. Dependent Variable: ROA

**Source: Research Data (2021)**

**Table 4: ROE Durbin-Watson Test**

Model	R	R-Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.876 <sup>a</sup>	.768	.668	.053725	2.058

a. Predictors: (Constant), TOD/TA, LOD/TA, SOD/TA  
b. Dependent Variable: ROE

**Source: Research Data (2021)**

#### 4.3.5 Multicollinearity Test

Multicollinearity reduces the precision of the estimated coefficients for the independent variables which reduces the statistical predictive power of the regression model. Multicollinearity test is undertaken in SPSS through the collinearity diagnostics. A Variance Inflation Factor (VIF) that is greater than 10 is indicative of multicollinearity. Table 5 below shows the collinearity values for each independent variable. All the VIF figures are less than 4 which confirms that the predictor variables have no multicollinearity and therefore suited for regression analysis.

**Table 5: Multicollinearity Test**

Variable	Collinearity Statistics	
	Tolerance	VIF
Short-term Outstanding Debts to Total Assets (SOD/TA)	.323	3.094
Long-term Outstanding Debts to Total Assets (LOD/TA)	.367	2.722
Total Outstanding Debts to Total Assets (TOD/TA)	.370	2.703

**Source: Research Data (2021)**

## 4.4 Correlation Analysis

A correlation test is important in establishing a relationship between variables. The correlation coefficients indicate whether a relationship is positive or negative. A correlation analysis was done on the variables using Pearson correlation test and the results are in Table 6 below. The data shows that the correlation between Returns on Total Assets (ROA) and Returns on Shareholders' Equity (ROE) is the highest and significant at 0.9997 while the lowest negative and significant correlation was between Short-term Debts to Total Assets (SOD/TA) and Long-term Debts to Total Assets (LOD/TA) at -0.765. The correlation that was positive and insignificant was between SOD/TA and ROA and ROE at 0.516 and 0.559 respectively. Long-term Outstanding Debts to Total Assets (LOD/TA) was negatively correlated with all the other variables. This indicates that the bank should always minimize the proportion of Long-term Debts.

**Table 6: Correlation Analysis**

		ROA	ROE	SOD/TA	LOD/TA	TOD/TA
ROA	Pearson Correlation	1				
	Sig. (2-tailed)					
ROE	Pearson Correlation	.997**	1			
	Sig. (2-tailed)	.000				
SOD/TA	Pearson Correlation	.516	.559	1		
	Sig. (2-tailed)	.104	.074			
LOD/TA	Pearson Correlation	-.671*	-.692*	-.765**	1	
	Sig. (2-tailed)	.024	.018	.006		
TOD/TA	Pearson Correlation	.819**	.842**	.763**	-.725*	1
	Sig. (2-tailed)	.002	.001	.006	.012	

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

\* . Correlation is significant at the 0.05 level (2-tailed).

**Source: Research Data (2021)**

## 4.5 Regression Analysis

Regression analysis on Returns on Total Assets (ROA) against the variables representing capital structure was done using SPSS. The study findings in Table 7 below shows that  $R^2$  value was 0.748 which implies that all the capital structure variables explain 75% of the variance in the ROA.

**Table 7: ROA Model Statistics Summary**

Model	R	R-Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.865 <sup>a</sup>	.748	.640	.008631	2.205

a. Predictors: (Constant), TOD/TA, LOD/TA, SOD/TA  
b. Dependent Variable: ROA

**Source: Research Data (2021)**

The Analysis of Variance (ANOVA) in Table 8 below indicates that the capital structure variables collectively were a significant predictor of ROA,  $F(3,7) = 6.919$ ,  $p = 0.017$ ,  $R^2 = 0.75$ .

**Table 8: ROA Analysis of Variance (ANOVA) Table**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.002	3	.001	6.919	.017 <sup>b</sup>
	Residual	.001	7	.000		
	Total	.002	10			

a. Dependent Variable: ROA  
b. Predictors: (Constant), TOD/TA, LOD/TA, SOD/TA

**Source: Research Data (2021)**

The coefficients analysis in Table 9 below indicates that individually SOD/TA and LOD/TA were not significant predictors of ROA as all their p-values were higher than 0.05. TOD/TA was the only individual variable that was significant predictor returning a p-value of 0.024. The analytical model for ROA is:

$$ROA = -.080 - 0.066*SOD/TA - 0.154*LOD/TA + 0.152*TOD/TA$$

**Table 9: ROA Coefficients Table**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.080	.049		-1.637	.146
	SOD/TA	-.066	.050	-.444	-1.329	.225
	LOD/TA	-.154	.134	-.362	-1.154	.286
	TOD/TA	.152	.053	.896	2.872	.024

**Source: Research Data (2021)**

Regression analysis on Returns on Total Assets (ROE) against the capital structure variables was done using SPSS. The study findings in Table 10 below show that  $R^2$  value was 0.768 which implies that all the capital structure variables explain 77% of the variance in the ROE.

**Table 10: ROE Model Statistics Summary**

Model	R	R-Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.876 <sup>a</sup>	.768	.668	.053725	2.058

a. Predictors: (Constant), TOD/TA, LOD/TA, SOD/TA

b. Dependent Variable: ROE

**Source: Research Data (2021)**

The Analysis of Variance (ANOVA) in Table 11 below indicates that the capital structure variables collectively were a significant predictor of ROE,  $F(3,7) = 7.705$ ,  $p = 0.013$ ,  $R^2 = 0.77$ .

**Table 11: ROE Analysis of Variance (ANOVA) Table**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.067	3	.022	7.705	.013 <sup>b</sup>
	Residual	.020	7	.003		
	Total	.087	10			

a. Dependent Variable: ROE

b. Predictors: (Constant), TOD/TA, LOD/TA, SOD/TA

**Source: Research Data (2021)**



The coefficients analysis in Table 12 below indicates that individually SOD/TA and LOD/TA were not significant predictors of ROA as all their p-values were higher than 0.05. TOD/TA was the only individual variable that was significant predictor returning a p-value of 0.022. The analytical model for ROA is:

$$ROA = -.538 - 0.361*SOD/TA - 0.937*LOD/TA + 0.968*TOD/TA$$

**Table 12: ROE Coefficients Table**

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	-.538	.304		-1.771	.120
	SOD/TA	-.361	.311	-.372	-1.162	.283
	LOD/TA	-.937	.831	-.339	-1.127	.297
	TOD/TA	.968	.329	.880	2.938	.022

**Source: Research Data (2021)**

#### **4.6 Discussion of Research Findings**

The study research objective was to establish the effect of capital structure on the financial performance of Family Bank Kenya Ltd for the 11 years period (2010-2020). Secondary data was collected from the audited financial statements of the bank which were available from the website. The data was analysed using SPSS version 22 and Microsoft Excel to determine the suitability of the data for regression analysis and other parametric tests. The data was found to have met all the requirements for regression analysis.

The Pearson correlation analysis revealed that Returns on Total Assets (ROA) and Returns on Shareholders' Equity (ROE) had the highest positive and significant correlation at 0.997 and 0.01 level of significance. Short-term Outstanding Debts to Total Assets ratio (SOD/TA) was the only independent variable that had the lowest and insignificant correlation to Returns on Total Assets (ROA) and Returns on Shareholders' Equity (ROE) at 0.516 and 0.559 respectively. Long-term Outstanding Debts to Total Assets (LOD/TA) was the only independent variable that had negative and significant correlations with ROA and ROE, the dependent variables at -0.671 and -0.692 respectively. Total Outstanding Debts to Total Assets ratio (TOD/TA) was the only independent variable that had the highest and positively significant

correlations with ROA and ROE, the dependent variables at 0.819 and 0.842 respectively.

The regression analysis on how ROA related with the independent variables indicated that all the independent variables collectively had a  $R^2$  of 75% which confirms that the model would account for 75% of the variance in ROA and the remaining 25% was accounted for by other factors not within the scope of the research. Collectively the capital structure variables positively and significantly affected the ROA with a p-value of 0.017 which is less than 0.05 with an F-statistic of 6.919. The t-statistic revealed that only one independent variable TOD/TA positively and significantly contributed a unique variance at a p-value of 0.024.

The regression analysis on how ROE related with the independent variables indicated that all the independent variables collectively had a  $R^2$  of 77% which confirms that the model would account for 77% of the variance in ROE and the remaining 23% was accounted for by other factors not within the scope of the research. Collectively the capital structure variables positively and significantly affected the ROA with a p-value of 0.013 which is less than 0.05 with an F-statistic of 7.705. The t-statistic revealed that only one independent variable TOD/TA positively and significantly contributed a unique variance at a p-value of 0.022. The other variables SOD/TA and LOD/TA had negative and insignificant impact on ROA and ROE.

The conclusion is that capital structure has a positive and significant impact on financial performance of Family Bank Kenya Ltd. This finding is in agreement with that of Saeed et al, (2013), Ali & Ali (2016), Nwaolisa & Chinelo (2017), and Serwadda (2019) who all concluded that capital structure has a positive and significant impact on financial performance of commercial banks. The study is at variance with conclusions reached by Ronoh and Ntoiti (2015), Gohar and Ur Rehman (2016), Siddik et al (2017), Adeoye and Olojede (2019), and Majumder (2018) who all arrived at a finding that capital structure negatively affects financial performance of commercial banks.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter will provide a summary of the results of the study, conclusions that can be derived from the results, recommendations for further research and the limitations of the study.

#### 5.2 Summary of Findings

The research objective was to establish the effect of capital structure on the financial performance of Family Bank Kenya Ltd for the 11 years period (2010-2020). Secondary data was collected from the audited financial statements of the bank which were available from the website. The data was analysed using SPSS version 22 and Microsoft Excel to determine the suitability of the data for regression analysis and other parametric tests. The data was found to have met all the requirements for regression analysis.

The Pearson correlation analysis revealed that Short-term Outstanding Debts to Total Assets ratio (SOD/TA) was the only independent variable that had the lowest and insignificant correlation to ROA and ROE at 0.516 and 0.559 respectively. Long-term Outstanding Debts to Total Assets (LOD/TA) was the only independent variable that had negative and significant correlations with Returns on Total Assets (ROA) and Returns on Shareholders' Equity (ROE), the dependent variables at -0.671 and -0.692 respectively. Total Outstanding Debts to Total Assets ratio (TOD/TA) was the only independent variable that had the highest and positively significant correlations with ROA and ROE, the dependent variables at 0.819 and 0.842 respectively.

The regression analysis on how both ROA and ROE related with the independent variables indicated that collectively all the independent variables had a  $R^2$  of 75% and 77% respectively and that they collectively, positively and significantly affected financial performance by returning p-values of 0.017 and 0.013 respectively as per the ANOVA tables. The t-statistic revealed that only one independent variable Total Outstanding Debts to Total Assets (TOD/TA) ratio positively and significantly contributed a unique variance at a p-value of 0.022 for ROA and p-value of 0.024 for

ROE. The other independent variables Short-term Outstanding Debts to Total Assets (SOD/TA) ratio and Long-term Outstanding Debts to Total Assets (LOD/TA) ratio negatively and insignificantly affected financial performance as represented by ROA and ROE.

### **5.3 Conclusion**

The statistical analysis showed that Total Outstanding Debts to Total Assets (TOD/TA) was the only individual variable that positively and significantly affected the Returns on Total Assets (ROA) and Returns on Shareholders' Equity (ROE). This is in contrast to the effect of Short-term Outstanding Debts to Total Assets (SOD/TA) and Long-term Debts to Total Assets (LOD/TA) which was negative and statistically insignificant. The implication here is that collectively the capital structure variables positively and significantly impacted financial performance but individually the impact was different. Management of banks are required to holistically consider all the factors in making capital structure decisions.

The objective of the study was to examine the relationship between capital structure and financial performance of Family Bank Kenya Ltd for the 11 years period 2010-2020. The conclusion of the study is that capital structure had a positive and significant impact on financial performance of Family Bank Kenya Ltd for the period under study.

### **5.4 Recommendations**

Researchers, scholars and students of finance may have interest in doing further empirical studies to establish why Short-term Outstanding Debts to Total Assets (SOD/TA) and Long-term Outstanding Debts to Total Assets (LOD/TA) ratios showing negative and insignificant impact of financial performance of Family Bank Kenya Ltd while Total Outstanding Debts to Total Assets ratio was having a significantly positive impact on financial performance.

Bank managers and directors may have interest in mobilizing more short-term deposits so as to improve the Pearson correlation between Short-term Outstanding Debts to Total Assets (SOD/TA) ratio which though was found to be positively correlated to Returns on Total Assets (ROA) and Returns on Shareholders' Equity

(ROE), the correlation was insignificant. Cheaper short-term customer deposits are key to improving the financial performance of the bank.

Bank managers and directors will need to ensure that long-term borrowings are competitively priced as the study showed that Long-term Outstanding Debts to Total Assets (LOD/TA) ratio was found to be negatively and significantly correlated to ROA and ROE. Long-term financing like loans and bonds tend to be more expensive as compared to short-term customer deposits and should only be used to build the capacity of the bank to improve its service delivery and expansion plans.

Governments and regulatory bodies should implement policies that have less adverse effects on the banks financial performance. The data showed that Family Bank Kenya Ltd posted a loss in the 2017 with an ROA of -0.0146 or -1.46% and ROE of -0.0833 or -8.33% and poor performance in 2018 and 2019 when the interest rate cap was in force.

## **5.5 Limitations of the Study**

The period of the study was 11 years from 2010 to 2020 this limitation was due to the fact that Family Bank Kenya Ltd was licensed to operate as a commercial bank in the year 2007 and the published audited financial statements that were relied on for the study were only available from 2009. The financial statements for the two years from starting operations as a commercial bank would be the formative years and would most likely not be comparable to the other years when the bank had established itself in the market.

The number of variables considered in the study were 5 variables (two dependent and 3 independent variables). There were no control and other variables that affect financial performance introduced in the study that maybe could have provided different results.

The secondary data utilized for the study was extracted from the audited financial statements which are prepared in accordance with some established standards and may not adequately disclose some data that would have been useful for the study. The researcher had to use the demand deposits for short-term outstanding liabilities as the information on the other deposits was not complete and would change with the changes in the audit firm or standards for preparation of audited financial statements.

The period under study was also covering the years when the interest cap was in operation and that could have an impact on the outcome of the study.

## **5.6 Suggestions for Further Research**

Further research could be undertaken to establish the reasons why long-term outstanding debts had a negative and significant correlation with Returns on Total Assets (ROA) and Returns on Shareholders' Equity (ROE) considering that most banks prefer long-term bonds as a source of finance when they have exhausted internal funds.

Research on other factors like corporate governance impact on the financial performance through the use of primary data could be useful in determining their impact and also provide more information on shaping policy decisions on improving performance of commercial banks.

A longer period of study in addition to increasing the number of banks in the same tier with Family Bank Kenya Ltd may also help in bringing more clarity on the effect of capital structure on the financial performance of commercial banks.

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## Appendices

### Appendix I: Research Data

KSH.'000	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Profit after tax	220,895	390,999	490,917	540,730	1,226,403	1,780,602	1,936,658	331,294	-1,009,577	234,846	895,955	1,076,047
Short-term Liabilities	7,588,483	11,949,262	13,528,329	16,792,838	21,631,826	27,017,558	31,219,555	27,399,616	30,467,069	31,395,562	34,652,969	42,256,390
Long-term Liabilities	472,972	685,187	892,145	527,564	1,343,811	2,900,335	5,587,720	8,933,191	8,362,529	4,903,207	3,954,679	3,017,148
Total Liabilities	11,600,388	17,061,089	22,678,035	26,125,167	37,532,692	51,192,010	69,263,432	56,813,497	57,442,650	55,483,390	66,448,922	77,429,061
Total Assets	13,453,266	20,188,378	26,001,753	30,985,096	43,500,988	61,812,663	81,190,214	69,432,374	69,050,943	66,909,838	78,857,125	90,590,626
Shareholders' equity	1,852,878	3,127,289	3,323,718	4,859,929	5,968,296	10,620,653	11,926,782	12,618,877	11,608,293	11,426,448	12,408,203	13,161,565

Source (Audited Financial Statements)

### Appendix II: Research Data

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ROA	0.0232	0.0213	0.0190	0.0329	0.0338	0.0271	0.0044	-0.0146	0.0035	0.0123	0.0127
ROE	0.1570	0.1522	0.1321	0.2265	0.2147	0.1718	0.0270	-0.0833	0.0204	0.0752	0.0842
SOD/TA	0.7104	0.5858	0.5894	0.5808	0.5131	0.4366	0.3638	0.4400	0.4618	0.4755	0.4988
LOD/TA	0.0407	0.0386	0.0185	0.0361	0.0551	0.0781	0.1186	0.1208	0.0721	0.0543	0.0356
TOD/TA	1.0143	0.9819	0.9169	1.0078	0.9722	0.9687	0.7544	0.8296	0.8162	0.9117	0.9139

Source: Computed from the Audited Financial Statements

### Appendix III: Definitions of Variables and Their Computation

	<b>SYMBOLS</b>	<b>DESCRIPTION</b>	<b>DEFINITION</b>
1.	ROA	Returns on Total Assets	Net Profit After Tax divided by Average Total Assets (Opening and Closing Balances)
2.	ROE	Returns on Shareholders' Equity	Net Profit After Tax divided by Average Shareholders' Equity (Opening and Closing Balances)
3.	SOD/TA	Short-term Outstanding Debts to Total Assets	Demand customer deposits divided by Total Assets
4.	LOD/TA	Long-term Outstanding Debts to Total Assets	Borrowings divided by Total Assets
5.	TOD/TA	Total Outstanding Debts to Total Assets	Total Liabilities divided by Total Assets