

**AN EXAMINATION OF FACTORS OF BANKING INDUSTRY
PROFITABILITY, A CASE OF COMMERCIAL BANKS IN TANZANIA**

BY

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**A Dissertation Submitted in Partial Fulfilment of the Requirements For
Award of the Degree of Master of Business Administration Corporate
Management (MBA-CM) of Mzumbe University**

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CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a dissertation entitled **Examination of Banking Industry Profitability; A Case of Commercial Banks in Tanzania**, in partial/fulfilment of the requirements for **Award of the Degree of Master of Business Administration Corporate Management (MBA-CA)** of the Mzumbe University.

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DEDICATION

To the memory of my parents who instilled in me a lifelong thirst for reading.

ABBREVIATIONS AND ACCRONYMS

AfCap	Africa Capitalization Fund
ATM	Automatic Teller Machine
BOT	Bank of Tanzania
CAMEL	Capital Adequacy, Asset Quality, Management Quality, Earnings Liquidity
CAR	Capital Adequacy Ratio
CRDB	Cooperative and Rural Development Bank
DANIDA	Danish International Development Agency
DSE	Dar es Salaam Stock Exchange
EPS	Earnings Per Share
ER	Efficiency Ratios
ERP	Economic Recovery Programs
FSAL	Financial Sector Adjustment Loan
IFC	International Finance Corporation
LART	Loans and Advances Realization Trust
LDR	Loans to Deposits Ratio
NBC	National Bank of Commerce
NIM	Net Interest Margin Ratio
NMB	National Microfinance Bank
ROA	Return on Assets
SMEs	Small and Medium Enterprises

TIB	Tanzania Investment Bank
TRDB	Tanzania Rural Development Bank
TZS	Tanzanian Shilling

ABSTRACT

The banking industry is one of the significant sectors of the financial system in most countries. Banks play a crucial role of promoting the growth of an economy by mobilizing savings and using the mobilized savings in financing the most productive sectors of the economy. As such, commercial banks are important to the financial sector. The performance of a bank is usually measured by its profitability levels, which is essential to shareholders, customers as well as for the bank's continued survival and expansion.

The aim of this study was to establish factors of banking industry profitability; a case of Tanzanian banks, using the CAMEL Framework approach. The study specifically investigated the determinants of banks' profitability, and identifying the correlation between the variables in the CAMEL Framework and how they influence banks' profitability (ROA). The study analysed and compared the profitability performance of two Tanzanian banks, CRDB Bank Plc and NMB Bank Plc over a period of seven years from 2011 to 2017.

The methodology and procedure for data collection employed in the field were based on qualitative and quantitative methodologies. The study used a regression model to establish relationships between the dependent variable and the independent variables which include capital adequacy, assets quality, operational efficiency, earnings and liquidity

The ratios used include the following: Return on Assets (ROA) which has been taken to represent profitability, the Capital Adequacy Ratio CAR, Assets Quality Ratio which is represented by the ratio of non-Performing Loans, Management Quality which has been measured by the level of operating expenses used in achieving the operating income of the bank, and the Earnings Ratio as measured by NIM, which is Net interest income to Average earning assets.

From the regression analysis, the results show that OER is significant and has a positive influence on the bank's profitability for both CRDB and NMB banks, while LDR and NIM were observed to have significant influence on the profitability of

CRDB Bank. On the other hand NPL and CAR had a significant influence on the profitability of NMB bank.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Problem

Banking industry is one of the noteworthy parts of the money related framework in many nations (San and Heng, 2013). Banks assume a significant job of advancing the development of an economy by activating investment funds and utilizing the prepared assets in financing the most beneficial divisions of the economy (Alkhazaleh and Almsafir, 2014). Accordingly, business banks are imperative to the money related area, especially in creating economies where capital markets are not solid and not very much created. In economies where capital markets are as yet creating, banking organizations fill in as an indispensable wellspring of accounts for endeavors (Matthew and-Gyamfi, 2012). The exhibition of a bank is normally estimated by its Profitabilitylevels, which is fundamental to investors, clients and for the bank's proceeded with endurance and development (Nkegbe and Ustarz, 2015).

Benefit of banks is significant since the sufficiency of the financial business is firmly associated with the adequacy of the entire economy (Lipunga, 2014). The monetary quality of a financial organization is obviously related to its benefit, hence one of the most significant objectives of any bank's administration and initiative is to make benefits consistently since this will ensure the bank's proceeded with presence. Along these lines accomplishing productivity objectives is crucial to any bank (Adeusi, Kolapo, and Aluko, 2014).

As referenced by Gul, S. et al. (2011), the financial area goes about as the existence blood of present day exchange and business by giving them a significant wellspring of account. The modalities of banking tasks have changed a great deal in the new thousand years contrasted with the manner in which they used to be in the years former. A well working financial activity as referenced by Islam (2003) and a very much created productive financial division are significant essentials for sparing and venture choices for fast monetary development. It is the framework by which a

nation's most productive and proficient activities are deliberately and constantly supported.

Banks are depicted as go-betweens among savers and clients of capital. This is a result of their (banks') special ability to back generation by loaning their own obligation to operators ready to acknowledge it and to utilize it as cash (Drigă and Dura, 2014).

As indicated by Bollard (2011) any cutting edge monetary framework adds to financial advancement and the improvement in expectations for everyday comforts by giving different administrations to the remainder of the economy. These incorporate clearing and settlement frameworks to encourage exchange, directing money related assets among savers and borrowers, and different items to manage hazard and vulnerability. Business banks are significant players in the money related framework and perform different key jobs that add to financial advancement of a nation. So as to play out their capacities, banks give an enormous number of money related administrations, called 'items' to pull in clients and to satisfy their needs.

All in all there are four general gatherings of administrations performed by banks, these include: (1) assembling investment funds; (2) broadening hazard; (3) designating reserve funds; and (4) observing the allotments of administrators. Every one of these capacities can impact reserve funds and venture choices and thus monetary development (Petkovski and Kjosevski, 2014). Observational considers by Levine(1997,2005); Wachtel (2001); Fink, Haiss and Vukšić(2005) (as refered to in Petkovski and Kjosevski(2014)) presumed that improvement of the money related area quickens monetary development. The Tanzanian financial industry is indispensable to the nation's economy and plays a vital money related middle person work. It assumes the job of monetary intermediation among borrowers and savers by the activation of capital from people with surplus money and diverting the assets to the shortage financial units (Kimutai and Jagongo, 2013).

The area has detailed consistent development in advances, gainfulness, resources and diverse item contributions. The size of the financial segment resources demonstrated a slight development of 2.57 percent during the year2016 as showed by an expansion

in complete resources from TZS 27,217.97 billion recorded in 2015 to TZS27,917.31 billion of every 2016 (BOT, 2016). On account of the significant pretended by banks in the economy of a nation, it is significant that their operational exhibition is observed on a proceeding and ordinary premise. The estimation of execution might be founded on gainfulness, productivity, liquidity or on other criteria relying upon the premiums of a specific gathering of stakeholders(Ap, 2015).The Framework for the Preparation and Presentation of Financial Statements exhibits an arrangement of various clients of budget reports that incorporate seven classes of clients (speculators, workers and gatherings that speak to them, loan specialists and providers, clients, governments and their offices and overall population), with their data needs(Luca, 2008). Numerous people with an enthusiasm for the presentation of an open or private element don't have the ability to require the element to deliver altered monetary or execution data. Rather, they depend on the universally useful monetary reports that such substances provide(Controller and Auditor-General, 2016). Clients are practically consistent in finding fiscal reports and the board discourse the most helpful wellsprings of budgetary data (EFRAG, 2009).

In Tanzania, the financial area has experienced critical changes and development since the part was first changed in the mid 1990s after the establishment of the Banking and Financial Institutions act in 1991 which ushered in the first round of reforms in the financial sector (Muganda, 2004).

The sector has also seen increased regulation by the Central Bank. The Bank (BOT) has continued with its efforts of ensuring compliance to internationally acceptable standards by developing rules and regulations for Basel II/III implementation in Tanzania (BOT, 2016b)

All these dynamics have brought an increased pressure and competition in the financial sector, with banks operating within the same markets struggling to retain their customers whilst at the same time trying to expand into new markets.

Why study these two banks specifically? The banks have a lot in common, both with a history going back before the introduction of market-based reforms in the mid-1990s which led to the privatization of NBC Bank and CRDB. It is this privatisation

which led to NBC being split into three entities, one of them being The National Micro-finance Bank.

According to the African Development Bank report (ADF, 2000), the objectives of the reforms included: (i) Consolidation of the Macro-economic Framework (ii) Strengthening the financial infrastructure, (iii) Bank Restructuring, (iv) Restructuring of the major bank clients, and (v) Deepening of the Financial Sector.

According to the report, Bank Restructuring meant that the existing banks were to undergo financial, operational and managerial restructuring within the framework of a liberalized financial system. This entailed among other actions, the cleaning-up of the balance sheets, the transfer of non-performing loans to the Loans and Advances Realization Trust (LART), the recapitalization of the insolvent banks, branch closures and staff rationalization (ADF, 2000)

1.2 Statement of the Problem

The two banks are considered industry giants, commanding a combined market share of 36.83% (BOT, 2016a) with a large branch net-work spread in all regions of the country (CRDB: 250 branches (CRDB, 2016); and NMB with 188 branches (NMB, 2016)).

A review of the published Annual Reports of the two banks covering the past six years from 2012 to 2017 indicates that NMB Bank is outperforming CRDB Bank in many key areas despite CRDB Bank having more resources compared to NMB Bank (CRDB and NMB annual report of 2016). Among others, the influencing factors that were identified included; increased number of customers and lower NPL. This research is therefore an attempt to find out the causes of this difference in performance by the two institutions to observe the existing heterogeneous variation of performance.

The profiles of the two banks as summarized above are enough to make the banks stand out from the rest of all the other players in the banking industry and hence my interest in this study, and the interest shown by other past researchers as shown below.

The study of banking sector profitability performance has drawn a growing interest as reflected by a number of studies in this area. Some of the studies that have been done on the performance of banks in Tanzania include the following: Comparative Analysis of Financial Performance of Commercial Banks in Tanzania by Ally, (2013), determinants of profitability of commercial banks using camel framework a case of Tanzania by Tiisekwa, (2013), Bank-specific, Industry-specific and Macroeconomic Determinants of Banks Profitability: Empirical Evidence from Tanzania (Kapaya & Raphael, 2016) and Commercial Banks Profitability Position: The Case of Tanzania by Qin & Dickson, (2012b).

The studies by Zawadi, (2013) and Tiisekwa, (2013) differ with this study by the fact that their studies are more general and relate to both small and medium commercial banks and they were carried out in the period between 2006-2012. The study by Zawadi focused on profitability as the only variable whilst this study aims to establish other factors which contribute to banks' profitability in addition to resources owned by the banks as represented in their balance sheets.

On the other hand, the study by Fadhila Tiisekwa is much closer to this study as it compares the financial profitability of three major banks in Tanzania, CRDB, NBC and NMB using the CAMEL framework. On the other hand, this study focused on only two banks, CRDB Bank and NMB Bank, and made use of the most recent available data, that is, financial statements of the banks covering the period 2011 to 2017. The study used both traditional ratio analysis, and CAMEL framework.

The two banks, CRDB Bank and NMB Bank were both previously wholly owned by the government before the major financial sector reforms of the early 1990s. Presently the Government shareholding is 21% in CRDB Bank (CRDB, 2016) and 31.8% in NMB Bank (NMB, 2016) respectively. Both banks are considered industry giants with a large branch net-work in all regions of the country (CRDB: 250 branches (CRDB, 2016); and NMB with 188 branches (NMB, 2016)). Management of both banks is mostly consisted of Tanzanians except for one or two expatriates at the executive management level of both banks.

Given this almost similar status of the two banks, it would be expected that performance of the two giant banks in terms of profitability would more or less be on an equal level, taking into account their country-wide branch network distribution, and the similar market in which both operate.

1.3 Objectives of the Study

1.3.1 General Objective

The study intended to examine the factors that influence financial profitability in the banking industry.

1.3.2 Specific Objectives

- i. To determine the influence of capital adequacy on financial profitability of the banking industry.
- ii. To identify the influence of asset quality and management quality on financial profitability of the banking industry
- iii. To examine the influence of earning on the financial profitability of the banking industry
- iv. To know the extent of the significance of influence on financial profitability in the banking industry among those factors

1.4 Research Questions

- i. How do capital adequacies influence financial profitability in the banking industry?
- ii. Do the asset quality and management quality influence financial profitability?
- iii. Do the earnings influence financial profitability in the banking industry?
- iv. Is there any significant influence that exists between those factors and profitability?

1.5 Significance of the Study

The study is useful to the Management of the banks, as the results of the study brought into focus areas and factors identified by the research as contributing to the banks current profitability performance. This will make them undertake appropriate strategies to address areas in which they did not perform well.

The Board of Directors of the Banks will also have a clearer understanding of the underlying factors affecting the performance of the banks they manage and supervise, and thus be in a much better position to better oversee and manage the organizations placed under their care by shareholders.

The results of this study are helpful to the Supervisory authorities (The Central Bank) who can make use of the results of the research to undertake more informed on-site supervisory examination of the banks and issue appropriate recommendations to the Management of the Banks.

Policy maker scan make use of the results of the study to set limits of an acceptable level of administrative overheads a bank is allowed to pass on to customers and in order to avoid passing their inefficiencies to their customers. Bank's inefficiencies passed to customers increases bank's cost of funds thus discouraging borrowing and reducing the amount of credit sought by investors for economic activities

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The researcher discusses the relevant theories, and conceptual literature review to refer the concepts related to the problem and also an empirical literature review which reflects the findings done by other researchers related to the problem and the Research gap is identified.

2.2 Definition of concepts

2.2.1 Profitability

Profitability refers to cash that a firm can create with the assets it has. The objective of most associations is benefit augmentation (Niresh and Thirunavukkarasu, 2014). Productivity includes the ability to make profits by all the business tasks of an association, firm or organization (Muya and Gathogo, 2016). Benefit goes about as the business visionary's reward for his/her speculation and is one of the primary inspirations to a business person for working together. Benefit is likewise utilized as a file for execution estimation of a business (Ogbadu, 2009). Benefit has additionally been portrayed as the distinction between income got from deals and all out costs which incorporate material cost, work and different expenses (Stierwald, 2010).

Profitability which is the fundamental objective of a business undertaking can be communicated either as a bookkeeping benefit or as a financial benefit. It depicts the effectiveness of the administration in changing over an association's assets to benefits (Muya and Gathogo, 2016). In this way, firms are probably going to increase a ton of advantages identified with expanded Profitability (Niresh and Thirunavukkarasu, 2014). One significant precondition for any long haul endurance and accomplishment of a firm is benefit. It is Profitability that draws in speculators, and the business is probably going to get by for an extensive stretch of time (Margaretha and Supartika, 2016). Numerous organizations endeavor to improve their productivity and spend innumerable hours in gatherings attempting to think of

methods for decreasing working costs just as on the most proficient method to build their incomes (Schreibfeder, 2006).

In bookkeeping, Profitability is the overflow of income over costs for a predefined term that speak to profit of business banks from the different exercises they perform in a developing economy (Tariq et al., 2014). The benefit of a financial organization would thus be able to be characterized as net benefit of the bank (San and Heng, 2013). A business bank is productive in the event that it has collected more gains in budgetary point of view from contributed capital. Therefore, a bank's prosperity is resolved from the benefits it has made in a given money related year (Adeusi et al; 2014). Profitability likewise shows the relationship between the supreme measure of pay that demonstrates the ability of the bank to propel advances to its clients and upgrade its benefit. In the present aggressive condition, productivity is a key factor for the smooth running of a business and significantly affects execution of a bank and monetary improvement also (Tariq et al., 2014).

Profitability is additionally significant for a financial foundation so as to keep up its progressing exercises and for investors to create reasonable returns (Ponce, 2011). Profitability is one of the primary parts of monetary detailing for some organizations (Farah and Nina, 2016). Profitability is essential to the association's director just as the proprietors and different partners that are included or related to the firm since benefit gives an unmistakable sign of business execution. Productivity proportions are regularly used to gauge income created by a firm for a specific timeframe dependent on the association's business level, capital utilized, resources and profit per share (EPS). Profitability proportions are likewise used to quantify a company's procuring limit and is considered as a company's development and achievement pointer (Majed et al; 2012). Profitability is commonly estimated utilizing bookkeeping proportions with the most generally utilized benefit proportion being Return on Assets (ROA). ROA decides the measure of benefit earned per peddling of advantages. This mirrors the effectiveness with which the bank's supervisors utilize a bank's speculation assets or resources in age of salary (Sehrish et al; 2010).

ROA shows the administration productivity and delineates how successful and effectively the bank the board work as they utilize the association's advantages into the income. A high ROA proportion is a reasonable marker of a decent presentation or profitability of a banking entity (Bentum, 2012).

2.3 Theoretical Literature Review

This part reviews The Market Power Theory, Efficiency Theory, The Agency Cost Theory and The Signalling Theory as the underlying theories in explaining the profitability concept

2.3.1 Market Power Theory

Market power theory by Bain, (1951) stresses that an expansion in market power results into restraining infrastructure benefits. The hypothesis depends on the reason that convergence of the market is a best measure for market control since increasingly focused markets show predominant market defects and therefore encouraging different substances to set costs for their items and administrations at levels which are less ideal to their customers or clients (Punt and Rooij, 2001).

The hypothesis additionally insists that organizations with an enormous piece of the pie and sound separated items and administrations can undoubtedly gain monopolistic benefits and succeed or win against their rivals (Nkegbe and Ustarz, 2015).

The market control hypothesis expect that additional benefits result from a higher market focus which enables business banks to connive and procure supernormal benefits which emerge because of the organizations arrangement of separated items that likewise expands the piece of the pie and market control in deciding costs for items (Mirzaei *et al*; 2012)

The theory also explains the positive relation between bank size and financial profitability and further suggests that bank profitability is a result of the industries market structure ((Matthew & Laryea, 2012).

2.3.2 Efficiency Theory

The efficiency theory was formulated by Demsetz, (1973) as an alternative to the market power theory. The efficiency theory assumes that better administration and scale effectiveness results to higher fixation and in this way higher benefits. As needs

be, the hypothesis sets that administration proficiency expands benefits, yet additionally results to bigger piece of the pie gains and improved market focus (Brissimis et al; 2008).

In the financial business, the productivity hypothesis advocates that enormous business banks which have better and experienced administration and modern creation innovations can diminish their operational expenses, and accordingly procure more significant yields on interest in correlation to smaller banks (Soana, 2011).

2.3.3 Agency Cost Theory

The agency cost theory arose from the commitments by Jensen and Meckling, (1976). The hypothesis places that an association's financing structure can be utilized by the executives to determine a company's incomes issues.

Organization expenses emerge from partition of proprietorship and control which empowers supervisors who are utilized by the proprietors to attempt to amplify their advantages or utilize the assets depended to them for their own increases as opposed to expanding the estimation of the firm or the investors riches (Khan et al; 2012)

Jensen and Meckling, (1976)classified organization cost into expenses emerging from observing of supervisors by investors, cost of holding and remaining misfortune. The hypothesis likewise expresses that organization expenses incorporate expenses emerging from irreconcilable situation and activities between an association's supervisors and investors which are probably going to influence at the appointed time the principals' advantages and the firm value and profitability (Alfadhl & Alabdullah, 2013).

2.3.4 Signalling Theory

The signalling theory was put forth by Arrow, (1972)and Spence, (1973). The theory states that, the well performing firms and therefore profitable ones, offer quality information to users (Bini, Dainelli & Giunta, 2011). Thus, information is disclosed by means of specific indicators or ratios which measure specific conditions on which to enter into or renew the agency contract (Bini *et al*, 2011).

The signalling theory also describes the association which exists between profitability and capital structure of a firm (Alkhazaleh & Almsafir, 2014).

According to the signalling theory, the bank management will signal better future expectations when they increase the bank's capital by retaining profits from operations.

According to the signalling theory, when a bank performs well in terms of profitability, directors will wish to signal this achievement to the public and to its stakeholders by making appropriate disclosures which poor performing banks would not make (Muzahem, 2011).

2.4 Empirical Literature Review

2.4.1 Factors Influencing Profitability of commercial Banks

Profitability of the banking industry is a function of both internal and external factors. Al-Mutairi and Al-Omar (2008) undertook a study to identify factors facilitating profitability among commercial banks in Kuwait from 1993-2005. The results indicated that Equity, Assets quality, operating expenses ratio and total assets have a positive relationship with the Return on assets (ROA). However, the effect of loan – assets ratio and operating expenses ratio had no significant impact on profitability.

Internal factors are those factors which a bank's administration can control, though outer variables are those outside or past the bank's administration control. Outer factors that impact productivity of business banks are identified with legitimate and financial condition and contain components like loan fees, expansion, downturn, blast, guidelines, advertise development and market structure (Staikouras & Wood, 2011). The inner variables mirror the administration strategies of the banks and choices made about the wellsprings of assets, costs and liquidity the executives (Onuonga, 2014). Data on bank explicit elements that impact business banks benefit can be acquired from budget summaries. Hence the examination will concentrate on key proportions separated from the fiscal summaries of the banks. This incorporate; capital sufficiency, liquidity, credit hazard and effectiveness in the bank's activities.

The size of a bank impacts execution to such an extent that bigger banks perform very much contrasted with little measured banks through saddling the economies of scale in their exchanges to such an extent that enormous banks will appreciate high benefits (Sehrish et al, 2010). Huge banks are expected to have more preferences when contrasted with their littler adversaries and have a more grounded dealing ability making it simpler for them to get profits by specialization and from economies of scale and extension (Alkhazaleh & Almsafir, 2014). Also, experimental proof demonstrates that the size of a bank legitimately influences gainfulness by lessening the expense of raising capital for enormous banks (Tariq et al., 2014).

Capital sufficiency alludes to an estimation of business bank's capacity or quality in money related terms. It demonstrates the bank's capacity to withstand anomalous and operational misfortunes. It likewise demonstrates the association's capacity to embrace extra business and measures the banks' capacity to viably retain chance. In this way, the proportion is used in ensuring the bank's store contributors just as advancing proficiency and soundness of budgetary frameworks (Bizuayehu, 2015).

Liquidity then again is characterized as the bank's capacity to meet its commitments, particularly those of contributors of assets to the bank (Ongore & Kusa, 2014). The accessibility of liquidity impacts benefit since it improves the limit of the bank to obtain money so as to satisfy present and fundamental needs. For business banks to increase open affirmation, they ought to have adequate liquidity to satisfy the needs of advance holders and contributors' needs (Chinoda, 2014). Deficient Liquidity levels lead to issues in creating assets and inability to satisfy present and unforeseen varieties in the wellsprings of financing (Tariq et al., 2014).

Advances to resources proportion then again, is typically used to ascertain the credit hazard position of a bank. The proportion shows the level of absolute resources used to give credits. A credit hazard pointer can be spoken to by various estimations including the proportion of advances misfortune arrangement to add up to advances just as development in bank stores. Higher arrangements for advance misfortunes could flag a probability of future misfortune on credits, and could likewise be an indication of an opportune acknowledgment of terrible advance by wary banks (Munyambonera, 2011). A higher proportion of NPLs to add up to advances and a flat out crumbling of credit portfolio quality contrarily influences business bank's

gainfulness (Roman and Tomuleasa, 2013). Moreover, an ascent in credit hazard expands the peripheral expense of advances, commitments and value, prompting the amplification of the expense of fund for the bank (Tariq et al., 2014).

Working expenses allude to the costs caused in the typical working of the bank separated from the expense of getting reserves. Observational proof demonstrates that low working costs lead to more noteworthy benefit of business banks. Different costs like the arrangements made towards terrible obligations and dicey obligations impact execution and are probably going to prompt plausible yearly misfortune on resources (Chinoda, 2014). Costs are ordinarily the operational expense of banks and they determine a small amount of banks income and have a reverse association with bank benefit, and demonstrate the capability of the bank organization and its dealings during activities (Tariq et al., 2014). The operational effectiveness pointer additionally alluded to as costs by the board is given as cost to salary proportion. The higher the proportion, the less effective the bank is, and the bank could be antagonistically influenced in its arrival on resources relying upon the degree of rivalry in the business (Munyambonera, 2011).

Kosmidou (2008) decided the elements of banks benefit in Greece, whereby a relapse examination was utilized and it was recognized that, bank size and resource quality had a positive connection and were essentially identified with gainfulness. Chatzoglou, Diamantidis and Vraimaki (2010) additionally examined financial efficiency in Greece. They utilized standard proportion examination for estimating the exhibition of banks. Their outcomes showed that enormous size banks perform superior to medium and little banks. They reasoned that gainfulness is decidedly related with a bank's size.

In an examination by Qin and Dickson, 2012 on the benefit of three business banks in Tanzania for a time of ten years (2000-2009), the distinguished components were liquidity and resource quality. They were found to positively affect benefit, except for the degree of non-performing advances which impacted gainfulness. Also the creators reasoned that capital ampleness, liquidity and resource quality are of key significance to business banks gainfulness in light of the fact that in their nonattendance banks won't make benefits.

Marobhe and Pastory (2015) on the other hand, utilized a different relapse model in an examination which affirmed that capital sufficiency, liquidity, resources quality and large scale monetary variables are basic parts in impacting productivity of business banks.

Partner, (2014) examined the impacts of bank explicit and macroeconomic factors on banks' productivity in Tanzania utilizing the fixed impacts relapse model on a board information got from 23 banks from 2009 to 2013. The outcomes indicated that bank-explicit factors altogether influence banks' productivity; then again the macroeconomic variables were resolved not to essentially influence banks' gainfulness.

In one more examination led by Olweny and Shipho (2011) to decide and assess the impacts of market structure factors, remote possession and market focus on the gainfulness of business banks in Kenya, a various direct relapse technique was utilized. The examination of the outcomes indicated that all bank explicit elements had a measurably huge effect on productivity.

Louati et al. (2015), Smaoui et al. (2011), Al-Hassan et al, (2010), Zeitung (2012) and (Al-Hassan et al. (2010) found that, the effect of inside components like bank's size, liquidity, all out capital and stores, and capital ampleness had impact on the presentation of the banks. While, Zeitung (2012) said operational efficiency of a bank also influences the profitability.

2.4.2 Methods used in the study of the Determinants of Banks Profitability

There are numerous studies on the subject which have covered all regions of the world including studies on profitability determinants in Tanzania, Kenya, other African countries outside East Africa, and in countries outside Africa as well. In these studies, different methods have been used. The major method used most frequently is the CAMEL framework. On the other hand, other studies have recommended the use of DEA as alternative to the CAMEL framework.

As already mentioned, the most commonly used model and which has been used with success is the CAMEL framework. The model has been used in many studies to

examine factors affecting bank profitability. The method has been used by Uzhegova (2010) and Nazir(2010).

In order to establish determinants of profitability of commercial banks in Tanzania, Tiisekwa(2013b)conducted a study by applying the CAMEL framework in comparing the financial performance of three major banks in Tanzania, namely; CRDB bank, NBC Bank and NMB Bank. The banks were ranked using a CAMEL rating system and it was concluded that profitability of commercial banks as measured by ROA is significantly determined by the quality of assets and that to improve profitability, credit information should be improved.

Another study was undertaken to study the effect of ownership identity on the performance of Kenyan banks. The study used the CAMEL approach to measure the profitability performance of commercial banks. The authors concluded that the moderating role of ownership identity on the overall performance of commercial banks in Kenya was not significant. In addition the study revealed that the direction and effect of macroeconomic variables on the performance of commercial banks in Kenya was inconclusive.

In view of the conclusions made by the above empirical researches, a clear case has been made to the effect that internal or bank specific factors contribute to the profitability of a bank. The researcher therefore proposes to apply the ratio analysis approach (the CAMEL Framework) on the most recent data to confirm the conclusions made by previous researchers.

2.5 The CAMEL approach

The CAMEL framework approach was developed by regulatory authorities of the U.S banks. The Federal Reserve Bank, the Comptroller of the Currency and the Federal Deposit Insurance Corporation all use this system (McNally 1996). Since then the framework has invariably been used by a number of scholars to establish bank specific factors (Dang, 2011).

In 1988, The Basle Committee on banking supervision recommended the use of the CAMEL components (capital adequacy, assets quality, management quality, earnings and liquidity) as criteria for the assessment of a financial institution ADB (2002).

In 1997 an additional component, the market risk (S) was added to CAMEL (Gilbert, Meyer and Vaughan 2000). Despite this addition, central banks in most developing countries continue using the CAMEL instead of CAMELS in their evaluation of the Financial Institutions. In Tanzania the central bank (BOT) has adopted the use of CAMEL in its supervision activities of the financial institutions.

The CAMEL ratings are used to establish the overall condition of a financial institution and determine its operational, financial and managerial strengths and weaknesses. Each component in the CAMEL model is scored from 1 to 5, where an institution having a rating of 1 is considered most stable; those with a rating between 2 and 3 are considered average, and those with a rating of between 4 and 5 are considered below average and therefore are placed under close monitoring by the central bank.

The following weights have been assigned to the different components of the CAMEL framework: Capital Adequacy 20%, Asset Quality 20%, Management 25%, Earnings 15%, Liquidity 10% Sensitivity to market risk 10% (Parveenbari, 2010).

Table 2. 1 Components, ratios and implications of CAMEL

CAMEL Component	Ratio(s)	Implications
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CAMEL Component	Ratio(s)	Implications
Capital Adequacy	(CAR) Leverage ratio Debt to Assets ratio Dependency ratio	Shows dependency of an institution on outside funding for operations. Shows overall capital sufficiency Indicates provisioning requirements on loan portfolio for current period.
Asset Quality	(Loan loss Provision ratio) Portfolio in Arrears Reserve ratio Non-performing assets ratio	Measures amount of default in portfolio Indicates extent of uncollectible loans over the last period. Indicates adequacy of reserves in relation to portfolio.
Management Quality	Earnings per employee Portfolio per Credit Officer Cost per unit of money lent Operating Expenses Ratio Cost per loan	Indicates performance of loan officer and efficiency of methodology. Indicates performance of manager and efficiency of methodology. Indicates potential financial productivity of loan officer Indicates efficiency in disbursing loans (in monetary terms) Indicates efficiency in disbursing loans
Earnings	(Return on Equity) Return on Assets Profit Margin Financial Cost Ratio	Indicator of efficiency of lending operations Shows ability of an Institution to cover operational costs which include financial and non-financial expenses. Indicates financial productivity of credit services and investment activities.
Liquidity	(Current ratio) Cash and Equivalents to Total Assets Ratio Cash and Equivalents to Total Debt ratio Loan to Total Deposit Ratio	Shows ability of an Institution to meet projected near term obligations.

Source: Tiisekwa, 2013

2.6 CAMEL Rating Base

According to the Uniform Financial Institutions Rating System 1997, each component in the CAMEL model is scored from 1 to 5. A component with a rating of 1 indicates a strong position while a rating of 5 represents the weakest position of a financial institution in that particular component. For each CAMEL component a rating scale has been established based on the prevailing financial and economic conditions (Saltzman & Salinger, 1998).

The rating methodology established by Babar and Zed (2011) has been adapted for the purpose of this research because their rating bases (ratios) are similar to the components of the CAMEL framework adopted for the research.

The various components of the CAMELS rating framework used in the rating of various financial institutions are given in Table 2.4 below.

Table 2. 2 Rating base of CAMELS components

CAMELS Rating Components	Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
Capital Adequacy Ratio	$\geq 15\%$	12% - 14.99%	8% - 11.99%	7% - 7.99	$\leq 6.99\%$
Assets quality ratio	$\leq 1.25\%$	$\leq 2.5 - 14.99\%$	$\leq 3.5\% - 2.6\%$	$\leq 5.5\% - 3.6\%$	$\geq 5.6\%$
Management	$\leq 25\%$	30% - 26%	38% - 31%	45% - 39%	$\geq 46\%$
Earnings (ROA)	$\geq 1\%$	0.9% - 0.8	0.35 - 0.7	0.25 - 0.34	≤ 0.24
ROE	$\geq 22\%$	$\geq 17\% - 21.99\%$	10% - 16.99%	7 - 9.99%	≤ 6.99
Liquidity Ratio L1	≤ 0.55	0.62 - 0.56	0.68 - 0.63	0.80 - 0.69	≥ 0.81
Liquidity Ratio L2	$\geq 50\%$	45% - 49.99%	38% - 44.99%	33% - 7.99	$\leq 32\%$
Sensitivity Ratio	$\leq 25\%$	30% - 26%	37% - 31%	42% - 38%	$\geq 43\%$

Source: Babar and Zeb, 2011

The rating table established by Baber and Zeb (2010) does not give a rating for the Net Interest Margin (NIM). For this reason Bank of Tanzania standards which were used by Pastory and Qin, 2013 were used for this particular component and these are shown in table 2.5 below.

Table 2. 3 BOT standards that account for Net Interest Margin (NIM)

Rating	Net Interest income to average earning assets
1	Above 5%
2	5% - 3%
3	1% - 3%
4	0% - 1%
5	Below 0%

Source: Qin and Pastory, 2013

2.7 Conceptual Framework.

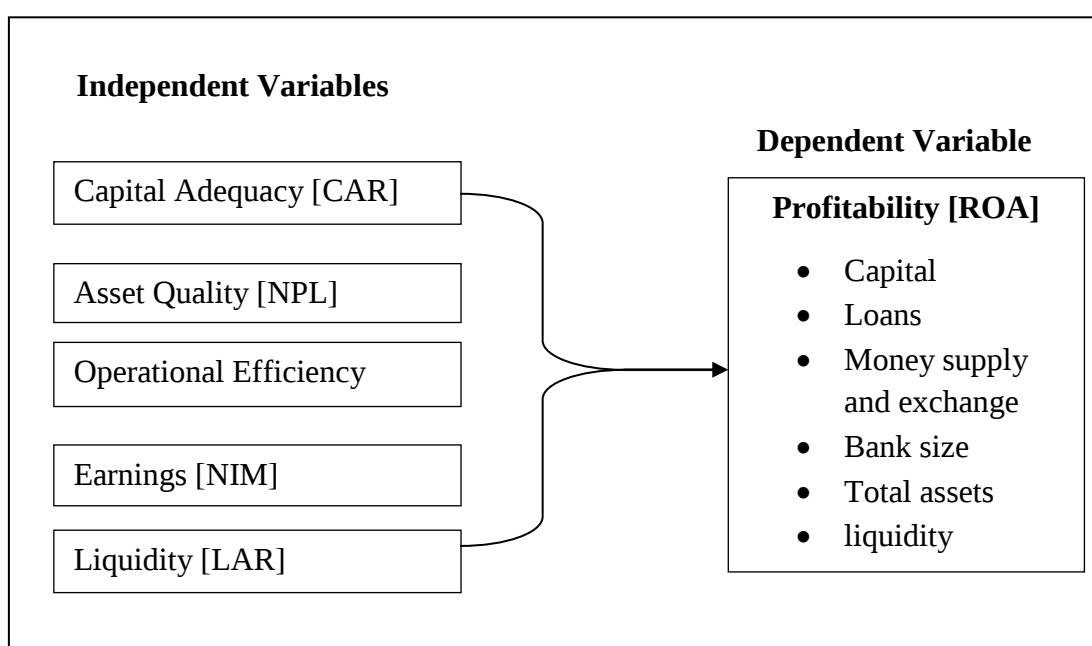
A conceptual framework shows diagrammatically a relationship that exists between study variables. In addition, the conceptual framework outlines the expected outcomes of the relationships between the independent variables and the dependent variable.

The CAMEL Framework which is the analysis adopted for this study, has a number of components from which ratios were extracted to represent the variables. These ratios were then used to conduct analyses and comparisons to establish the factors of banking profitability. Based on these ratios the banks were rated.

The aim of this study was to identify factors of banking industry profitability in Tanzania, and for this reason the independent variables were the ratios extracted from the CAMEL framework and include the internal (bank specific) factors which were stated to be the contributing factors to bank profitability. These are; capital adequacy, asset quality, Operational efficiency earnings and liquidity. The dependent variable was the profitability and was represented by Return on Assets (ROA).

The conceptualised relationship is depicted in the diagram shown below:

Figure 2. 1 Conceptual Framework



Source: Author's own composition

From the above conceptual framework, ROA has been identified as the dependent variable, while capital adequacy (CAR), asset quality (NPL), operational efficiency (OER), earning (NIM) and liquidity (LAR) have been identified as the independent variables.

Return on Assets (ROA) is the proportion of a bank's net after-charge salary isolated by its absolute resources. It gauges how productively the administration of the bank has had the option to change over the bank's or establishment's benefits into benefits.

In banking writing, there are numerous benefit proportions that have been utilized by scientists in estimating bank execution. Olson, et al. (2011) and Iqbal et al. (2005) utilized ROE and ROA as an estimation of the bank benefit, while Houcem Smaoui

et al.(2011) and Alkassim, F. A. (2005)used ROE, ROA and NIM as needy factors for gainfulness and proficiency, and they utilized the accompanying as autonomous factors; Asset Quality: Loan shortfall stores to Gross advances (LLR), Capital: Equity to Assets proportion (EA), Liquidity: Net Loans to Total Assets (NLA).

Gul S. et al. (2011) then again referenced the components considered for investigation incorporate ROA,ROE, ROCE and NIM as needy factors with each being inspected independently with similar factors i.e., bank size, capital, stores, advances, GDP and swelling. At long last, Zeitun (2010) said the outside determinants are the macroeconomic factors, (for example, loan fee, swelling, GDP, cash supply and conversion standard) that influence the entire economy and are considered as important determinants of performance.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section provides a description of the study area, and the methods which were employed by the researcher during data collection. It also explains the sampling procedures and the instruments which were used in data collection, data processing, analysis, and presentation. According to Kothari (2004), a research methodology is the way in which a research problem is systematically solved. Research methodology is a systematic way in which a researcher chooses to deal with particular questions in the process of conducting a research.

3.2 Area of the study

The major part of the study was conducted in Mbeya City because that is where the researcher is located and because all the data required for the study was available online. The researcher picked CRDB Mwanjelwa branch and NMB Mbalizi road to make a comparison of their performance. However, the findings that were obtained from the selected branches were termed as the general results of the two commercial banks.

3.3 Research design

A research design is a course of action of conditions for accumulation and examination of information in a way that intends to consolidate pertinence of the exploration reason with economy in techniques (Kothari, 1990). McMillan and Schumacher (2001) keep up further that an exploration configuration portrays the systems for leading the examination, including when and from whom the data was collected. It is therefore a plan of what data, from whom, how and when data will be collected and when it will be obtained and analyzed. This study sought to establish determinants of commercial banks' profitability in Tanzania. The researcher had proposed to use a descriptive research which defines a subject by constructing a

profile of people, groups or events through tabulation and the collection of data on the frequencies on the study variables (Cooper & Schindler, 2001). A descriptive design brings out complete explanation of the existing conditions to ensure that bias is eliminated in data collected.

In view of this, a descriptive design was used to establish factors that influence profitability of commercial banks in Tanzania.

3.4 Research Approach

A combination of qualitative and quantitative methods were used in order to obtain methodological triangulation so as to maximize the quality of the collected data. Kombo & Tromp (2006) explain that qualitative and quantitative research approaches have often been used together in the same research project and in many other cases.

The study therefore employed both qualitative and quantitative approach in order to enhance the collection and analysis of information from the respondents and from annual reports. The methodology and procedure for data collection employed in the field were based on qualitative and quantitative methodologies.

According to Limb (2001), quantitative methods provide comparisons and statistical aggregations of data. Qualitative method was used to determine and describe the factors that determine banks profitability. On the other hand a quantitative method was applied when doing a regression analysis on the variables that influence commercial banks profitability which can be quantified, compared and measured to provide a correlation result.

3.5 Target Population

Population refers to all people or items with similar characteristics that one wishes to study (Quinlan *et al*, 2011).

The population of this study comprised of the existing 59 commercial banks which are in operation in Tanzania according to the directory of banks and financial institutions operating in Tanzania as at 30th June 2017(BOT, 2017). But the target

population is specifically two commercial banks (CRDB Bank Plc and NMB Bank Plc).

3.6 Sampling procedures and Sample size

Sampling is done for the purpose of measuring some elements of the population and drawing conclusions regarding the entire population. In this study the sampling technique used was purposive sampling. Purposive sampling was used because the researcher aimed to collect information from key people who are the Bank officials of the two specific banks. The study population is the existing 59 commercial banks which are in operation in Tanzania according to the directory of banks and financial institutions operating in Tanzania as at 30th June 2017 (BOT, 2017).

For the purpose of this study two banks, CRDB Bank Plc and NMB Bank Plc were selected and the reasons for selecting these two banks were:

- a) Availability of audited annual financial reports which are included in the two banks' Annual Reports.
- b) The two banks are considered industry giants, commanding a combined market share of 36.83% (BOT, 2016a) with a large branch net-work spread in all regions of the country (CRDB: 250 branches (CRDB, 2016); and NMB with 188 branches (NMB, 2016)

3.7 Types of Data and Data Collection methods

The researcher collected both primary and secondary data. For the purpose of this study, a structured questionnaire was used to collect primary data, and published annual reports for a period of seven years (2011-2017) including their audited financial statements were used.

3.7.1 Primary Data

Primary data are those which are collected fresh and for the first time and thus happen to be original in character. The researcher collected primary data from 20 bank officials (including Branch managers, Credit officers and Branch accountants of the selected banks on the factors influencing profitability of commercial banks. The data which was collected was first hand data through which analysis and

interpretation was done. A structured interview guide was used to gather information pertaining to the factors influencing banks profitability. This is shown in appendix I.

3.7.2 Secondary Data

Secondary data are those data collected from reviewed documents. Moreover secondary data is referred to as the use of data collected and recorded by other people. It is a cheap source of data since the research uses ready-made data (Kothari, 2004)

The data used for the study is historical data from the audited financial statements of the banks as presented in the two banks' published annual reports (soft copies). Methods of collection included visiting websites of the two banks for a review of the official reports posted therein, and from online reports posted by Bank of Tanzania and by browsing the internet and reading published sources of other various relevant reports.

3.8 Data Analysis

Data analysis means making sense of relevant data gathered from sources such as interviews, on-site observations, and documents and then responsibly presenting what the data reveals (Caudle, 2004).

The qualitative data that was gathered from the branch manager of the two selected banks resulted in information that was important in analyzing the determinants of profitability of the two commercial banks, namely CRDB and NMB Banks.

Quantitative data analysis involved coding, classification, cleaning and entering data into the computer software programme. Raw data were cleaned, coded, verified and analysed by using

Regression analysis calculations and Microsoft Excel 2003 programmes. The analysis of this study was based on a CAMEL framework and included capital adequacy, assets quality, management quality, earnings, and liquidity management.

The ratios were analysed and compared using regression analysis over the CAMEL framework elements to determine the factors that have a significant influence on the profitability of the two commercial banks in the study period

3.8 1 Analytical model

The study used a regression model to establish relationships between the dependent variable and the independent variables which include capital adequacy, assets quality, operational efficiency, earnings and liquidity

The analytical model is as represented hereunder, which is further discussed in the preceding chapter four.

$$ROA = B_0 + \beta_1 (CA) + \beta_2 (NPL) + \beta_3 (OER) + \beta_4 (NLM) + \beta_5 (LDR) + \varepsilon$$

Where;

Return on Assets ROA	=	$\frac{\text{Net income}}{\text{Total assets}}$
Capital Adequacy Ratio =CAR	=	$\frac{\text{Tier I + Tier II}}{\text{Risk Weighted Assets}}$
Asset Quality Ratio (Non-Performing Loans Ratio) NPL	=	$\frac{\text{Non-Performing Loans}}{\text{Total Loans\& Advances}}$
Management Quality (Operational Efficiency Ratio) OER	=	$\frac{\text{Total Operating Expenses}}{\text{Total Revenue}}$

$$\begin{aligned} \text{Earnings Performance (Net Interest Margin) NIM} &= \frac{\text{Net Interest}}{\text{Average Earning Assets}} \\ \text{Liquidity Management (Loans to Deposits Ratio) LDR} &= \frac{\text{Total Loans and Advance}}{\text{Total Deposits}} \end{aligned}$$

$$\beta_0 = \text{Constant}$$

$$\beta_1 - \beta_5 = \text{Are Coefficients of the regression equation}$$

$$\varepsilon = \text{Probable error of the regression.}$$

3.8.2 Test of significance

The levels of significance used in this regression were 90%, 95% and 99% confidence levels, the correlation coefficient was used to determine the statistical significance of the research.

3.8.3 Regression Analysis

Linear regression is a predictive analysis. Regression models are used to explain the relationship between a dependent variable and one or more independent variables. In multiple linear regression analysis a dependent variable is predicted by two or more independent variables. In order for the results of a multiple linear regression analysis to be valid, there are a number of assumptions to be considered, but mainly there are four assumptions which include: normality of residues, linearity in the parameters, assumption about the model error and assumption about measurement error.

Normality of Residues or Error

This assumption requires the indicator or potentially reaction factors to be regularly appropriated; explicitly it is accepted that mistakes are typically conveyed for any mix of qualities of predictor variables. (Wooldridge, 2013).

Assumption about the Model: Linearity in the parameters

The multiple linear regression models are considered to be linear in the regression parameters (Chatterjee and Hadi, 2012). This means that the response variable is assumed to be a linear function of the parameters $(\beta_0, \beta_1, \dots, \beta_n)$ but not necessarily a linear function of the predictor variables. (Osborne and Waters, 2002).

Assumption about the model error

Errors are assumed to have mean zero for any combination of values on the predictor variables, and are assumed to be independent. They are also generally assumed to have an unknown but finite variance that is constant across all levels of the predictor variables (homoscedasticity constant variance), (Chatterjee and Hadi, 2012), (Weisberg, 2005).

Assumption about the measurement error

The predictor variables are assumed to be measured without errors, as errors in the response variable (but not in the predictors) will not harmfully affect inferences relating to unstandardized regression coefficients (Chatterjee and Hadi, 2012), (Montgomery et al, 2001).

Other assumptions like R^2 and multicollinearity is also taken into consideration.

3.9 Validity and Reliability of Data

The validity of information is its relevance and appropriateness to the research question and the directness and strength of its association with the concepts under scrutiny (Pierce, 2008)

During the study data validity was ensured through cross checking data in the Published Annual Reports to Audited Financial Statements of the Banks.

CHAPTER FOUR

RESEARCH FINDING AND PRESENTATION

4.1 Introduction

This chapter presents the results arising from data analysis. The results are presented according to the objectives of the study, namely; to determine the influence of capital adequacy on financial profitability of the banking industry, to identify the influence of asset quality and management quality on financial profitability of the banking industry, to examine the influence of earning on the financial profitability of the banking industry and lastly to know the extent of the significance of influence on financial profitability in the banking industry among those factors. A total of 20 respondents were interviewed on the factors influencing banks' profitability.

The chapter presents the summary of findings of analysed data obtained from the six ratios extracted from the Annual Reports of the selected banks, (ie CRDB Bank Plc and NMB Bank Plc), and covering a period of seven financial years from 2011 to 2017. The conclusions drawn from the analysis of the results, recommendations, and suggestions of areas which may require further focus in future researches are also presented.

The chapter begins by presenting the results of calculations of the components of the CAMEL framework together with the ratio representing profitability (ROA) for the two banks.

The chapter also presents findings of correlation analysis based on regression model and an interpretation of the research findings

4.2 Comparison of financial profitability of CRDB and NMB Banks

The researcher was interested in determining the financial performance between CRDB and NMB banks so as to investigate whether the identified variables have influence on the performance of the two banks or not and the extent of influence among the identified variables. According to the published annual reports of the two

banks covering a period of seven years from 2011 to 2017, data indicate that CRDB Bank has more resources at its disposal compared to NMB Bank.

A comparison of customer deposits, loan portfolio and total assets of the banks for the past 6 years from 2012 to 2017 confirms this as shown in Table 4.1 and 4.2 below.

Table 4. 1 A comparison of customer deposits, loan portfolio and total assets from 2012 to 2017

2017			2016		2015		2014		2013		2012	
Total Assets	Loans	Deposits	CRDB	NMB	CRDB	NMB	CRDB	NMB	CRDB	NMB	CRDB	NMB
			4,238	4,272	4,046	3,749	4,180	3,569	3,398	3,012	3,062	2,589
5,806	2,845											
5,506	2,787											
5,323	3,208											
4,951	2,794											
5,330	3,218											
4,580	2,482											
4,125	2,784											
3,882	2,148											
3,545	2,304											
3,280	1,768											
3,074	1,944											
2,796	1,549											

Source: Annual reports of CRDB Bank and NMB Bank (All amounts in TZS Billions).

Table 4.2 Bank profitability from 2012 to 2017

2017			2016		2015		2014		2013		2012	
Profit After Tax	CRDB	NMB	CRDB	NMB	CRDB	NMB	CRDB	NMB	CRDB	NMB	CRDB	NMB
	30,809	93,494	63,770	153,825	122,373	150,288	95,304	155,555	83,445	133,638	80,215	97,401

Source: Annual reports of CRDB Bank and NMB Bank (All amounts in TZS Billions)

From the position given in the above tables, Table 4.1 shows that CRDB Bank appears to have advantage in all key resource areas, and for this reason it would be expected that it would have a stronger financial performance in terms of profitability compared to NMB Bank by virtue of this perceived strength.

Despite the strong base of resources at its disposal, (as shown in **Table 4.1** above), data as represented by financial profitability performance over the same period indicate that CRDB Bank's financial profitability performance was lower than that of NMB Bank which had fewer resources on a year-on-year basis. Thus this study therefore aimed to evaluate the Financial Performance of Banks operating in Tanzania and find out the determinants of banks' profitability by doing a comparison of CRDB Bank Plc And NMB Bank Plc.

Table 4.3 Ranking by CAMEL Ratios (average %)

Bank	ROA	CAR	NPL	OER	NIM	LDR
CRDB	2.56	16.15	9.18	50.24	7.70	76.59
NMB	4.74	21.12	2.90	51.21	10.28	71.4
Leader	NMB	NMB	CRDB	NMB	NMB	CRDB

Source: Research Findings

The placement of a bank in the ranking may change depending on the type of ratios used, but overall NMB Bank's performance over the seven year period has been very strong compared to that of its competitor. In addition NMB has a very low average NPL of 2.9% (compare to 5% recommended by BOT) and a higher NIM both of which contribute to its profitability and thus explaining why NMB Bank consistently continued to record higher profitability than its counterpart CRDB Bank. This variation was identified during an interview with the NMB branch manager who argued that, good asset management reflect good performance of the bank as evidenced by its average ROA, and as shown on the summary of key Performance Indicators on Appendix II.

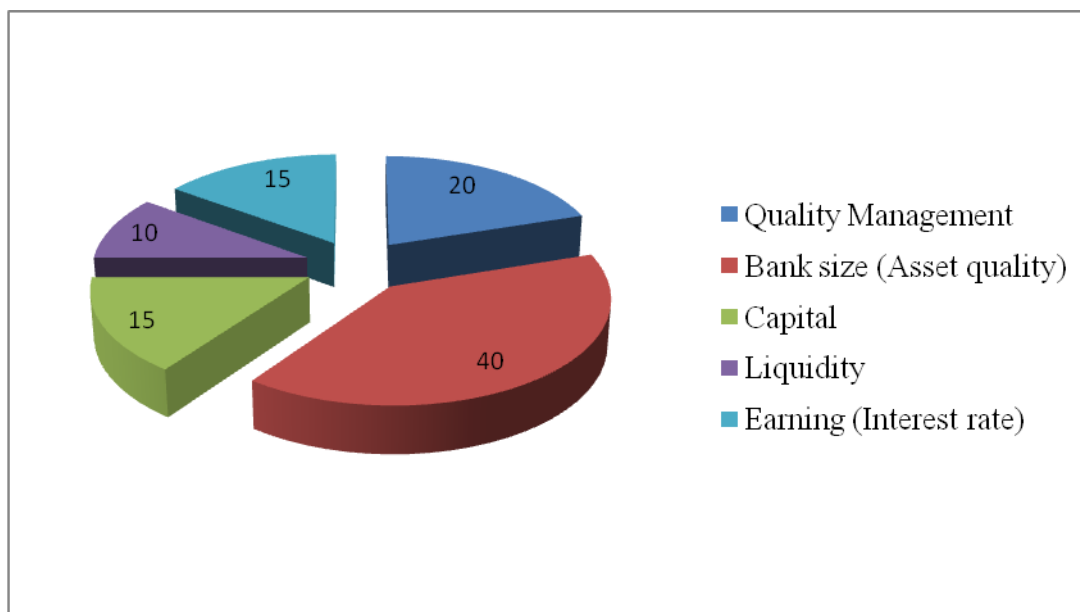
In this study, profitability of the banks is represented by Return on Assets (ROA). The results given by Table 4.4 indicate that Return on Assets for NMB Bank during the seven year period has consistently been high starting at 4.74% in 2011 and increasing over the years and gradually peaking at 5.79% in 2014. The ratio began to decrease in 2015 (4.74%) and reached a low of 2.5% in 2017. Despite this latter decrease, the performance was still higher than that recorded by CRDB Bank, which posted the highest return on assets of 3.46% in 2012 and the lowest rate of 0.81% in 2018.

The high levels of ROA achieved by NMB Bank throughout the period can be attributed to better asset management strategies which resulted in higher returns compared to its competitor.

4.3 Factors influencing profitability of the two banks

Within this objective, the researcher wanted to determine the factors that normally influence profitability of commercial banks in Tanzania and more specifically CRDB and NMB banks. The bank managers were asked to state the possible factors influencing their banks profitability. Among others, the identified factors were: quality management, capital adequacy, total assets owned by the bank, liquidity management and earnings as shown in figure 4.1 below

Figure 4. 1Factors determining banks profitability



Source: Research data, 2018-10-08

The data from figure 4.1 above comprises of the findings from CRDB and NMB bank. From all the interviewed respondents, the results reveal that the bank size was determined to be a major factor of banks profitability constituting about 40 percent of the interviewed respondents. On the other hand quality management constituted 20 percent, while 15 percent of the respondents stated that factors influencing banks profitability are capital and earnings from interest, with only 10 percent of the respondents mentioning liquidity as a factor influencing banks profitability.

Generally a bank's size was determined by majority of the respondents in the study area as it was revealed that big banks have more market power and are able to set their favorable interest rate spread. Large size banks perform better than small and medium banks because of economies of scale and therefore large banks are perceived to earn more profits.

The quality of assets management was another factor that was identified to have influence of banks performance. However, respondents argued that quality management of the assets owned by the bank could facilitate the performance of commercial bank; this is measured by the Non-Performing Loans Ratio given by NPL. With this result the bank Managers were able to provide the NPL ratios of the

two banks are shown in Table 4.4 below for clear observation of what existed in the two banks in the study period.

All banks' management are concerned with the quality of their assets because the performance of the banks to a large extent depends on the level of the quality of their assets. For this reason, assets management is of utmost importance to the management of a commercial bank.

As it was revealed by respondents from NMB, asset management was acknowledged to have influence on the performance of financial institution. This has been observed from the results shown in Table 4.4, that NMB Bank showed a better management of its assets as determined by the NPL Ratios. During the seven year period only once in 2017(5.79%) did its ratio go above 5%. For four straight years (2011-2015) NMB managed to keep the NPL ratio between 1.11% and 2.61%.

CRDB Bank on the other hand posted the lowest ratio of 4.64% in 2014, but had ratios of between 5.48% and 8.22% in the rest of the years, with the ratio peaking in 2016 and 2017 when the ratios recorded were 15.85% and 15.97% respectively.

In connection with the asset quality the researcher noted that the determination of the quality of the performance of a management team is oftentimes a difficult variable to determine as it is qualitative in nature and varies with individual institutions. For this reason and for the purpose of this study, the Operational Efficiency Ratio (OER) was used as a measure of the quality of management. The ratios obtained for the two banks are shown on Table 4.4 below.

According to Cooper and Schindler, (2001), efficient banks are defined as those with efficiency ratios (ER) less than 51 percent while inefficient banks are those with efficiency ratios greater than 81 percent. For this reason the study has adopted a maximum ratio of 51% as the industry average.

Going by the ratios in Table 4.4, both banks performed well in this respect except in 2011 and 2012 when NMB Bank recorded a ratio of 55.55% and 52.96 %; and in 2011 and 2017 when CRDB Bank efficiency ratios were 53.11% and 54.52% respectively.

The capital ratio is spoken to by all out value over all out resources. The capital proportion demonstrates how much hazard is secured by bank's capital, which means the manage an account with a higher capital proportion is viewed as more secure than that with a lower proportion. The bank's financial soundness is in this way upgraded, and further advantages the bank from lessening the subsidizing cost. Given this point, it is accepted that a higher capital proportion positively affects a bank's exhibition, particularly during monetarily troublesome occasions.

The levels of capital adequacy of the banks were another factor that were determined to influence profitability in the banking sector. Respondents from the banks revealed that capital adequacy is determined by the Capital Adequacy Ratio (CAR). Data shows that NMB Bank had a ratio of above 20% for a period of five consecutive years between 2011 and 2015, except for two years 2016 (19.64%) and in 2018 (17.53%). On the other hand, the CAR for CRDB Bank ranged between 14.53% in 2011 to 16.79 in 2017, with the highest rate of 19.42% being achieved in 2015 (Table 4.4).

The above notwithstanding, both banks were adequately capitalized and complied with Bank of Tanzania prudential guidelines on capital adequacy. The ratio required by BOT as a minimum is 12% of total capital to risk weighted assets.

The ratios of the two banks are indicative of their capital strength and the ability to absorb any potential shocks that may occur.

Basing on interest rates, respondents from the two banks showed almost a similar perception and there were no variation of results. From the data obtained, the earning was determined with the use of NIM. To make a comparison of the NIM Ratios of different banks is difficult because of different lending rates and borrowing rates used by the banks. But in the Tanzania market and especially between close competitors like NMB Bank and CRDB Bank, the rates are not that much varied. For this reason a standard formula for calculating the NIM has been adopted for the two banks for the whole period of the study. That is, a ratio of net interest to average earning assets.

From the ratios given in Table 4.4, the NIM for NMB Bank for all the years was above 10% except for 2011, 2015 and 2017 when the NIM was 8.96%, 9.24% and 9.61 % respectively. The highest NIM of 11.66% was recorded in 2012.

CRDB Bank meanwhile recorded the highest NIM in 2015 (8.61%) and the lowest in 2011 (6.42%). A high NIM is indicative of good lending practices and prudent investing decisions leading to increased financial productivity from lending and investment activities.

Liquidity was also mentioned as one of the factors influencing banks' profitability. Liquidity was measured by the use of loans to deposits ratio. The Loans to Deposits Ratio (LDR) is used to determine the amount of customer deposits which have been used by the bank for lending activities. A high ratio indicates the effectiveness of management in the utilisation of collected deposits.

Both liquidity deficit and surplus must be well managed to avoid negatively impacting the financial health of a bank. Excess liquidity reduces a bank's return on assets while liquidity deficit increases cost of funds of a bank in terms higher purchasing price for required funds in addition to tarnishing a bank's reputation. For this reason a very careful management of liquidity is required in order to strike a balance between profitability and liquidity risk.

Results for both banks showed strong liquidity management practices with CRDB Bank averaging a rate of 76.59% compared to that of NMB Bank of 71.4%. CRDB Bank achieved a high liquidity ratio of 83.91% in 2016 (NMB; 78.21% in 2016), and a low ratio of 68% in 2011 (NMB; 65.56% in 2012).

A Summary of the CAMEL Ratios

Table 4.4 below provides a summary of the key financial ratios extracted from the CAMEL framework used for the variables of the study comprising: Return on Assets (ROA), Capital Adequacy Ratio (CAR), Assets Quality Ratio (NPL), Management Quality Ratio (OER), Earnings Performance Ratio (NIM) and a Measure of Liquidity Management.

Table 4.4 A Summary of the CAMEL Ratios

A SUMMARY OF THE CAMEL ELEMENTS (RATIOS)								
	2017	2016	2015	2014	2013	2012	2011	AVG
RETURN ON ASSETS (ROA)								
CRDB BANK:	0.81%	1.98%	3.34%	3.15%	3.36%	3.46%	1.84%	2.56%
NMB BANK:	2.50%	4.47%	4.74%	5.79%	5.73%	5.18%	4.74%	4.74%
CAPITAL ADEQUACY RATIO (CAR)								
CRDB BANK:	16.79%	16.36%	19.42%	15.00%	15.13%	15.82%	14.53%	16.15%
NMB BANK:	17.53%	19.64%	21.62%	22.27%	22.89%	21.98%	21.92%	21.12%
ASSETS QUALITY RATIO (NON PERFORMING LOANS RATIO;(NPL)								
CRDB BANK:	15.85%	15.97%	7.67%	4.64%	5.48%	6.41%	8.22%	9.18%
NMB BANK:	5.79%	4.66%	1.93%	2.61%	2.43%	1.79%	1.11%	2.90%
MANAGEMENT QUALITY (OER) (OPERATIONAL EFFICIENCY RATIO)								
CRDB BANK:	54.52%	51.90%	47.97%	49.01%	47.67%	47.49%	53.11%	50.24%
NMB BANK:	49.04%	50.59%	50.89%	50.06%	49.35%	52.96%	55.55%	51.21%
EARNINGS PERFORMANCE (NIM) (NET INTEREST MARGIN)								
CRDB BANK:	7.83%	8.54%	8.61%	7.57%	7.44%	7.48%	6.42%	7.70%
NMB BANK:	9.61%	10.06%	9.24%	11.09%	11.33%	11.66%	8.96%	10.28%
LIQUIDITY MANAGEMENT (LDR) (LOANS TO DEPOSITS RATIO)								
CRDB BANK:	72.47%	83.91%	83.09%	81.93%	75.24%	71.50%	68.00%	76.59%
NMB BANK:	70.92%	78.21%	74.94%	71.33%	68.28%	65.56%	70.58%	71.40%

Source: Research Findings

4.4 Correlation of the determined factors on profitability of the banks

Two multiple linear regression models were analyzed, one for CRDB Bank and the second for NMB Bank so as to determine the variables (factors) that have a significant influence on the financial profitability of the commercial banks. All the assumptions as stated in chapter three were taken into consideration in the regression model.

Profitability of the bank was determined using ROA.

The dependant and independent variables were identified using the following formula:

$$ROA = B_0 + \beta_1 (CA) + \beta_2 (NPL) + \beta_3 (OER) + \beta_4 (NLM) + \beta_5 (LDR) + \varepsilon$$

In this study the Profitability is the dependent variable.

Table 4.5. Variables of the equation

Variables	Symbol	Equation
Return on Assets	ROA	Net income to Total assets
Capital Adequacy Ratio	CAR	Tier I and II to risk weighted assets
Non-Performing Loan Ratio	NPL	Non-performing loans to total loans
Operational Efficiency Ratio	OER	Total operating expenses to total revenue
Net Interest Margin	NIM	Net interest to average earning assets
Loans to Deposits Ratio	LDR	Total loans to total deposits

Source: Research Data

A multi linear regression analysis was performed with secondary data using a sample of data from CRDB and NMB banks for the period 2011 – 2017.

4.5 Regression analysis for CRDB Bank

The regression equation is given by:

$$ROA = \beta_0 + \beta_1 (CA) + \beta_2 (NPL) + \beta_3 (OER) + \beta_4 (NLM) + \beta_5 (LDR) + \varepsilon$$

Where: β_0 = Constant.

β_1 to β_5 = Are coefficients of the regression equation.

ε = Probable error of the regression.

The development of the regression equation here is given to determine relationships between the variables where we do not have a unique relationship between these variables (CA; NPL; OER; NLM; LDR).

The use of the regression equation is to determine how profitability, as represented by ROA regresses on CA; NPL; OER; NLM; and LDR.

By using the regression equation above, and the values of ROA, CA, NPL, OER, NLM, and LDR as given in Table 4.4 above, it is required to find the values of β_0 and β_1 to β_5 and the determination of the value of ε .

4.5.1 The regression equation for ROA as it regresses on CAR for CRDB Bank.

The equation for the regression of ROA as it regresses on CA is given by:

$$ROA_{(CA)} = \beta_0 (CA) + \beta_1 (CA) \dots\dots\dots (1)$$

The calculations to establish the values for regression equations are conducted as follows.

Table 4.6 A Summary of ROA and CA ratios for CRDB Bank

Year	(ROA)	(CA)	(ROA) ²	(CA) ²	(ROA)*(CA)
2011	0.0184	0.1453	0.00033856	0.02111209	0.00267352
2012	0.0346	0.1582	0.00119716	0.02502724	0.00547372
2013	0.0336	0.1513	0.00112896	0.02289169	0.00508368
2014	0.0315	0.15	0.00099225	0.0225	0.004725
2015	0.0334	0.1942	0.00111556	0.03771364	0.00648628
2016	0.0198	0.1636	0.00039204	0.02676496	0.00323928
2017	0.0081	0.1679	0.00006561	0.02819041	0.00135999
Σs	0.1794	1.1305	0.00523	0.1842	0.029041

Source: Research Findings

To calculate the values of β_0 (CA) and β_1 , this necessitates using the formulae given by:

$$\beta_0 (CA) = \frac{[\Sigma(CA)] * [\Sigma[(ROA) * (CA)]] - [\Sigma(ROA)] * [\Sigma(CA)^2]}{[\Sigma(CA)]^2 - n[\Sigma(CA)^2]}$$

Therefore from the equation above:

$$\beta_0 (CA) = \frac{[1.1305] * [0.029041] - [0.1794] * [(0.1842)]}{(1.1305)^2 - 7(0.1842)}$$

Therefore, $\beta_0 (CA) = 0.0188772400448559$

$$\beta_1 = \frac{\Sigma[(ROA) * (CA)] - \frac{[\Sigma(CA) * \Sigma(ROA)]}{n}}{\Sigma(CA)^2 - \frac{[\Sigma(CA)]^2}{n}}$$

By substituting the values from Table 4.6 above in our equation above we obtain:-

$$\beta_1 = \frac{[0.02904147] - \frac{[(1.1305) * (0.1794)]}{7}}{(0.1842) - \frac{(1.1305)^2}{7}}$$

$\beta_1 = 0.0420932738186855$

Therefore, equation (1) is given by:

$$ROA_{(CA)} = 0.0188772400448559 + 0.0420932738186855(CA)$$

4.5.2 The Regression Equation for ROA as it Regresses on Assets Quality Ratio (Non Performing Loans Ratio; (NPL) for CRDB Bank.

The equation is given by:

$$ROA_{(NPL)} = \beta_0 (NPL) + \beta_2 (NPL) \dots \dots \dots (2)$$

The calculations to establish the regression equations are conducted as follows.

Table 4.7 A Summary of ROA and NPL ratios for CRDB Bank

Year	(ROA)	(NPL)	(ROA) ²	(NPL) ²	(ROA)*(NPL)
2011	0.0184	0.0822	0.00033856	0.00675684	0.00151248
2012	0.0346	0.0641	0.00119716	0.00410881	0.00221786
2013	0.0336	0.0548	0.00112896	0.00300304	0.00184128
2014	0.0315	0.0464	0.00099225	0.00215296	0.0014616
2015	0.0334	0.0767	0.00111556	0.00588289	0.00256178
2016	0.0198	0.1597	0.00039204	0.02550409	0.00316206
2017	0.0081	0.1585	0.00006561	0.02512225	0.00128385
Σs	0.1794	0.6424	0.00523014	0.072531	0.014041

Source: Research Findings

In order to calculate the values of $\beta_0 (NPL)$ and β_2 , the following formulae is used:

$$\beta_0 (NPL) = \frac{[\sum (NPL)] * [\sum [(ROA) * (NPL)]] - [\sum (ROA)] * [\sum (NPL)^2]}{[\sum (NPL)]^2 - n [\sum (NPL)^2]}$$

Therefore from the equation above:

$$\beta_0 (NPL) = \frac{[(0.6424)] * [(0.014041)] - [(0.1794)] * [(0.072531)]}{(0.6424)^2 - 7(0.072531)}$$

Therefore, $\beta_0 (NPL) = 0.042004997093832$

$$\beta_2 = \frac{0[(ROA) * (NPL)] - P \frac{[P(NPL) PLo(ROA)]}{n}}{\sum (NPL)^2 PL \frac{[P(NPL)]^2}{n}}$$

From the equation above:

$$\beta_2 = \frac{[0.014041] - \frac{[(0.6424) \times (0.1794)]}{7}}{(0.072531) - \frac{(0.6424)^2}{7}}$$

Therefore $\beta_2 = -0.0264003113325033$

Substituting the calculated values into equation (2), this brings:

$$ROA_{(NPL)} = 0.042004997093832 - 0.0264003113325033(NPL)$$

The relationship given by this equation means that, given a constant factor of $\beta_0_{(NPL)} = 0.042004997093832$, then the alternative hypothesis proves that there is a relationship between $ROA_{(NPL)}$ and NPL, showing that $ROA_{(NPL)}$ changes $\beta_2 = -0.0264003113325033$ times as fast as NPL. It is also apparent from the equation that $\beta_0_{(NPL)}$ is directly proportional to $ROA_{(NPL)}$, due to the fact that $\beta_0_{(NPL)}$ attained a negative value for NPL. This also indicates that NPL has a significant negative influence on ROA.

This result implies that CRDB Bank should reduce the level of Non-Performing Loans in order to avoid reducing the ROA.

4.5.3 The Regression Equation for ROA as it Regresses on Operational Efficiency Ratio (OER) for CRDB Bank.

The equation is given by:

$$ROA_{(OER)} = \beta_0_{(OER)} + \beta_2_{(OER)} \dots\dots\dots (3)$$

The calculations to establish the regression equations are conducted as follows:

Table 4.8 A Summary of ROA and OER ratios for CRDB Bank

Year	(ROA)	(OER)	(ROA) ²	(OER) ²	(ROA)*(OER)
2011	0.0184	0.5311	0.00033856	0.28206721	0.00977224
2012	0.0346	0.4749	0.00119716	0.22553001	0.01643154
2013	0.0336	0.4767	0.00112896	0.22724289	0.01601712
2014	0.0315	0.4901	0.00099225	0.24019801	0.01543815
2015	0.0334	0.4797	0.00111556	0.23011209	0.01602198
2016	0.0198	0.5190	0.00039204	0.269361	0.0102762
2017	0.0081	0.5452	0.00006561	0.29724304	0.00441612
Σs	0.1794	3.5167	0.00523	1.771754	0.088373

Source: Research Findings

To calculate the values of $\beta_{0(OER)}$ and β_3 , necessitates using the formulae given by:

$$\beta_{0(OER)} = \frac{[(\sum(OER)) \sum(ROA \cdot OER)] - R[\sum(ROA)] \cdot [\sum(OER)^2]}{[\sum(OER)]^2 - n[\sum(OER)^2]}$$

Therefore from the equation above:

$$\beta_{0(OER)} = \frac{[(3.5167)] \cdot [(0.088373)] - [(0.1794)] \cdot [(1.771754)]}{(3.5167)^2 - 7(1.771754)}$$

$$\text{Therefore, } \beta_{0(OER)} = 0.2014677437690016$$

$$\beta_3 = \frac{[(\sum(ROA \cdot OER)) - E(\sum(OER) \cdot \sum(ROA))] - \frac{[\sum(OER)] \cdot [\sum(ROA)]}{n}}{\sum(OER)^2 - \frac{[\sum(OER)]^2}{n}}$$

From the equation above:

$$\beta_3 = \frac{[0.088373] - \frac{[(3.5167) \times (0.1794)]}{7}}{(1.771754) - \frac{(3.5167)^2}{7}}$$

$$\beta_3 = -0.3500083050538504$$

By substituting the values obtained from the calculations into equation (3), the following equation is obtained:

$$ROA_{(OER)} = 0.2014677437690016 - 0.3500083050538504(OER)$$

The relationship given by this equation means that, given a constant factor of $\beta_{0(OER)} = 0.2014677437690016$, then the alternative hypothesis proves that there is a relationship between $ROA_{(NPL)}$ and OER , showing that $ROA_{(OER)}$ changes $\beta_3 = -0.3500083050538504$ times as fast as OER . It is also apparent from the equation that $\beta_{0(OER)}$ is directly proportional to $ROA_{(OER)}$, due to the fact that $\beta_{0(OER)}$ attained a negative value for OER , thus indicating that OER has a significant negative influence on ROA . This result implies that CRDB Bank should limit the level of operating expenses.

4.5.4 The Regression Equation for ROA as it Regresses on Net Interest Margin (NIM) for CRDB Bank.

The equation is given by:

$$ROA_{(NIM)} = \beta_0 (NIM) + \beta_2 (NIM \dots\dots\dots) (4)$$

The calculations to establish the regression equations will be conducted as follows:

Table 4.9 A Summary of ROA and NIM ratios for CRDB Bank

Year	(ROA)	(NIM)	(ROA) ²	(NIM) ²	(ROA)*(NIM)
2011	0.0184	0.0642	0.00033856	0.00412164	0.00118128
2012	0.0346	0.0748	0.00119716	0.00559504	0.00258808
2013	0.0336	0.0744	0.00112896	0.00553536	0.00249984
2014	0.0315	0.0757	0.00099225	0.00573049	0.00238455
2015	0.0334	0.0861	0.00111556	0.00741321	0.00287574
2016	0.0198	0.0854	0.00039204	0.00729316	0.00169092
2017	0.0081	0.0783	0.00006561	0.00613089	0.00063423
Σs	0.1794	0.5389	0.00523	0.04182	0.013855

Source: Research Findings

$$\beta_{0(NIM)} = \frac{[(\sum(NIM)) \sum(ROA) - (\sum(NIM))^2 \sum(ROA)]}{[\sum(NIM)]^2 - n[\sum(NIM)^2]}$$

$$\beta_{0(NIM)} = \frac{[0.5389] \times [0.013855] - [0.1794] \times [0.04182]}{[0.5389]^2 - 7[0.04182^2]}$$

$$\beta_{0(NIM)} = 0.0154928033900782$$

$$\beta_4 = \frac{[\sum(ROA) \times \sum(NIM)] - \frac{[\sum(ROA)] \sum(NIM)}{n}}{\sum(NIM)^2 - \frac{[\sum(NIM)]^2}{n}}$$

$$\beta_4 = \frac{\sum[0.013855] - \frac{[\sum(0.5389)] \times [\sum(0.1794)]}{7}}{\sum(0.04182) - \frac{[\sum(0.5389)]^2}{7}}$$

$$\text{Thus giving } \beta_4 = 0.1316577774531753$$

4.5.5 The Regression Equation for ROA as it Regresses on Loans to Deposits Ratio (LDR) for CRDB Bank.

The equation is given by $ROA_{(LDR)} = \beta_{0(LDR)} + \beta_2(LDR)$

The calculations to establish regression equations are conducted as follows:

Table 4.10 A Summary of ROA and LDR ratios for CRDB Bank

Year	(ROA)	(LDR)	(ROA) ²	(LDR) ²	(ROA)*(LDR)
2011	0.0184	0.68	0.00033856	0.4624	0.012512
2012	0.0346	0.715	0.00119716	0.511225	0.024739
2013	0.0336	0.7524	0.00112896	0.56610576	0.02528064
2014	0.0315	0.8193	0.00099225	0.67125249	0.02580795
2015	0.0334	0.8309	0.00111556	0.69039481	0.02775206
2016	0.0198	0.8391	0.00039204	0.70408881	0.01661418
2017	0.0081	0.7247	0.00006561	0.52519009	0.00587007
Σs	0.1794	5.3614	0.00523	4.130657	0.138576

Source: Research Findings

$$\beta_{0(LDR)} = \frac{[(\sum(LDR))DRLD(ROA) * (\sum(LDR))]R[\sum(ROA)] * [\sum(LDR)^2]}{[D(LDR)]^2 D n [\sum(LDR)^2]}$$

$$\beta_{0(LDR)} = \frac{[5.3614] * [0.138576] - [0.1794] * [4.130657]}{[5.3614]^2 - 7[4.130657^2]}$$

$$\beta_{0(LDR)} = -0.0113036734603596$$

$$\beta_5 = \frac{[(ROA) * (\sum(LDR))] - D \frac{[D(\sum(LDR)) DRo(ROA)]}{n}}{\sum((LDR))^2 DR \frac{[D(\sum(LDR))]^2}{n}}$$

$$\beta_5 = \frac{\sum[0.138576] - \frac{[\sum(5.3614)] \times \sum(0.1794)]}{7}}{\sum(4.130657) - \frac{[\sum(5.3614)]^2}{7}}$$

Thus giving $\beta_5 = 0.0482198146421649$

The constants and regression coefficients obtained from the above calculations (from 4.5.1 to 4.5.5) are summarised in Table 4.11 below.

Table 4.11: A Summary of constants and regression coefficients for CRDB Bank.

S/ N	ROA CRDB				
	CA	NPL	OER	NIM	LDR
β_0	0.0188772400448559	0.042004997093832	0.2014677437690016	0.0154928033900782	0.0113036734603596
β_1	0.0420932738186855				
β_2		-0.0264003113325033			
β_3			-0.3500083050538504		
β_4				0.1316577774531753	
β_5					0.0482198146421649

Source: Research Findings

The Regression model is represented by the following equation, where profitability which is the dependent variable is represented by ROA:

$$ROA = \beta_0 + \beta_1 (CA) + \beta_2 (NPL) + \beta_3 (OER) + \beta_4 (NLM) + \beta_5 (LDR) + \varepsilon$$

By using the values in the summary given in Table 4.11 above, the following calculations are made.

$$\beta_0 = \sum (\beta_0 (CA), \beta_0 (NPL), \beta_0 (OER), \beta_0 (NLM) \text{ and } \beta_0 (LDR))$$

$$\begin{aligned} \text{Therefore; } \beta_0 &= (0.0188772400448559 + 0.042004997093832 + \\ &0.2014677437690016 + 0.0154928033900782 - 0.0113036734603596) = \\ &0.266539111 \end{aligned}$$

Thus giving $\beta_0 = 0.266539111$

From the general regression equation given by:

$$ROA = \beta_0 + \beta_1 (CA) + \beta_2 (NPL) + \beta_3 (OER) + \beta_4 (NLM) + \beta_5 (LDR) + \varepsilon,$$

ROA can be obtained by substituting all the constants and coefficients obtained above.

Thus;

$$\begin{aligned} ROA = & [0.266539111 + 0.0420932738186855(CA) - \\ & 0.0264003113325033(NPL) - 0.3500083050538504(OER) + \\ & 0.1316577774531753(NLM) + 0.0482198146421649 (LDR) + \\ & 0.1] \end{aligned}$$

$$\begin{aligned} ROA = & [0.366539111 + 0.0420932738186855(CA) - \\ & 0.0264003113325033(NPL) - 0.3500083050538504(OER) + \\ & 0.1316577774531753(NLM) + 0.0482198146421649 (LDR)] \end{aligned}$$

Taking the averages of the independent variables, therefore ROA is calculated as:

$$\begin{aligned}
\text{ROA} &= 0.366539111 + 0.0420932738186855(0.1615) - \\
&\quad 0.0264003113325033(0.0918) - 0.3500083050538504(0.5024) + \\
&\quad 0.1316577774531753(0.077) + 0.0482198146421649(0.7658) \\
\text{ROA} &= 0.366539111 + 0.0067980637217177 - 0.0024235485803238 - \\
&\quad 0.1758441724590544 + 0.0101376488638945 + \\
&\quad 0.0369267340529699 \\
\text{ROA} &= 0.2421338365992039 \\
\text{Giving the value of ROA} &= 0.2421338365992039
\end{aligned}$$

4.6 Regression analysis for NMB Bank

From the regression equation given by:

$$\text{ROA} = \delta_0 + \delta_1 (\text{CA}) + \delta_2 (\text{NPL}) + \delta_3 (\text{OER}) + \delta_4 (\text{NLM}) + \delta_5 (\text{LDR}) + \varepsilon$$

Where: δ_0 = Constant Year

δ_1 to δ_5 = Are Coefficients of the regression equation

ε = Probable error of the regression.

The development of the regression equation here is given to develop relationships between variables where we do not have a unique relationship between these variables (CA, NPL, OER, NIM, and LDR).

The regression equation requires determining how ROA for NMB Bank regress on CA; NPL; OER; NLM; and LDR.

From the regression equation above, and the values of ROA; CA; NPL; OER; NLM; and LDR given in Table 4.4 above, it is required therefore to find the values of δ_0 and δ_1 to δ_5 and to determine the value of ε .

4.6.1 The regression equation for ROA as it regresses on CAR for NMB Bank.

The equation is given by $\text{ROA}_{(\text{CA})} = \delta_0 (\text{CA}) + \delta_1 (\text{CA})$

To approach the situation, calculations to establish regression equations will be conducted as follows.

Table 4.12 A Summary of ROA and CA ratios for NMB Bank

Year	(ROA)	(CA)	(ROA) ²	(CA) ²	(ROA)*(CA)
2011	0.0474	0.2192	0.00224676	0.04804864	0.01039008
2012	0.0518	0.2198	0.00268324	0.04831204	0.01138564
2013	0.0573	0.2289	0.00328329	0.05239521	0.01311597
2014	0.0579	0.2227	0.00335241	0.04959529	0.01289433
2015	0.0474	0.2162	0.00224676	0.04674244	0.01024788
2016	0.0447	0.1964	0.00199809	0.03857296	0.00877908
2017	0.025	0.1753	0.000625	0.03073009	0.0043825
Σs	0.3315	1.4785	0.016436	0.314397	0.071195

Source: Research Findings

$$\delta_{0(CA)} = \frac{[(CA)A(CA(ROA)*(CA))]A[\Sigma(ROA)]*[\Sigma(CA)^2]}{[A(CA)]^2 A n[\Sigma(CA)^2]}$$

$$\delta_{0(CA)} = \frac{[1.4785]*[0.071195]-[0.3315]*[0.314397]}{[1.4785]^2 - 7[0.314397^2]}$$

$$\delta_{0(CA)} = -0.0701369733578551$$

$$\delta_1 = \frac{[(ROA)*(CA)]-A \frac{[A((CA) AAo(ROA)]}{\Sigma((CA)^2 AA \frac{[A((CA)]^2}{n}}}{\Sigma((CA)^2 AA \frac{[A((CA)]^2}{n}}$$

$$\delta_1 = \frac{\Sigma[0.071195]-\frac{[\Sigma(1.4785) \times \Sigma(0.3315)]}{7}}{\Sigma(0.314397) - \frac{[\Sigma(1.4785)]^2}{7}}$$

$$\delta_1 = 0.5562792110280587$$

4.6.2 The Regression Equation for ROA as it Regresses on Non Performing Loans Ratio (NPL) for NMB Bank.

The equation is given by $ROA_{(NPL)} = \delta_{0(NPL)} + \delta_2 (NPL)$

The calculations to establish regression equations are conducted as follows.

Table 4.13 A Summary of ROA and NPL ratios for NMB Bank

Year	(ROA)	(NPL)	(ROA) ²	(NPL) ²	(ROA)*(NPL)
2011	0.0474	0.0111	0.00224676	0.00012321	0.00052614
2012	0.0518	0.0179	0.00268324	0.00032041	0.00092722
2013	0.0573	0.0243	0.00328329	0.00059049	0.00139239
2014	0.0579	0.0261	0.00335241	0.00068121	0.00151119
2015	0.0474	0.0193	0.00224676	0.00037249	0.00091482
2016	0.0447	0.0466	0.00199809	0.00217156	0.00208302
2017	0.025	0.0579	0.000625	0.00335241	0.0014475
Σs	0.3315	0.2032	0.016436	0.007612	0.008802

Source: Research Findings

$$\delta_0 (NPL) = \frac{[(NPL)]PLNP(ROA)*(NPL)]L[\Sigma(ROA)]*[\Sigma(NPL)^2]}{[P(NPL)]^2 P n[\Sigma(NPL)^2]}$$

$$\delta_0 (NPL) = \frac{[0.2032]*[0.008802]-[0.3315]*[0.007612]}{[0.2032]^2 - 7[00.007612]}$$

$$\delta_0 (NPL) = 0.0612661584023692$$

$$\delta_2 = \frac{[(ROA)*(NPL)]-P \frac{P((NPL)) PL(ROA)}{n}}{\Sigma((NPL))^2 PL \frac{[P((NPL))]^2}{n}}$$

$$\delta_2 = \frac{\Sigma[0.008802]-\frac{[\Sigma(0.2032) \times \Sigma(0.3315)]}{7}}{\Sigma(0.007612)^2 - \frac{[\Sigma(0.2032)]^2}{7}}$$

$$\delta_2 = -0.4791491575619115$$

4.6.3 The Regression Equation for ROA as it Regresses on Operations Efficiency Ratio (OER) for NMB Bank.

The equation is given by $ROA_{(OER)} = \delta_0 (OER) + \delta_3 (OER)$

The calculations to establish regression equations will be conducted as follows.

Table 4.14 A Summary of ROA and OER ratios for NMB Bank

Year	(ROA)	(OER)	(ROA) ²	(OER) ²	(ROA)*(OER)
2011	0.0474	0.5555	0.00224676	0.30858025	0.0263307
2012	0.0518	0.5296	0.00268324	0.28047616	0.02743328
2013	0.0573	0.4935	0.00328329	0.24354225	0.02827755
2014	0.0579	0.5006	0.00335241	0.25060036	0.02898474
2015	0.0474	0.5089	0.00224676	0.25897921	0.02412186
2016	0.0447	0.5059	0.00199809	0.25593481	0.02261373
2017	0.025	0.4904	0.000625	0.24049216	0.01226
Σs	0.3315	3.5844	0.016436	1.838605	0.170022

Source: Research Findings

$$\delta_0 (OER) = \frac{[(\sum(OER))EROE(ROA)*(OER)]R[\sum(ROA)]*[\sum(OER)^2]}{[E(OER)]^2 E n[\sum(OER)^2]}$$

$$\delta_0 (OER) = \frac{[3.5844]*[0.170022]-[0.3315]*[3.5844]}{Year3.5844]^2 - 7[1.838605]}$$

$$\delta_0 (OER) = 25.94169425465811$$

$$\delta_3 = \frac{[(ROA)*(OER)]-E\frac{[E((OER))ERs(ROA)]}{n}}{\sum((OER))^2 ER\frac{[E((OER))]^2}{n}}$$

$$\delta_3 = \frac{\sum[0.170022]-\frac{[\sum(3.5844) \times \sum(0.3315)]}{7}}{\sum(1.838605) - \frac{[\sum(3.5844)]^2}{7}}$$

$$\delta_3 = 0.0862957631083948$$

4.6.4 The Regression Equation for ROA as it Regresses on Net Interest Margin (NIM) for NMB Bank.

The equation is given by $ROA_{(NIM)} = \delta_0 (NIM) + \delta_4 (NIM)$

The calculations to establish regression equations will be conducted as follows.

Table 4.15 A Summary of ROA and NIM ratios for NMB Bank

Year	(ROA)	(NIM)	(ROA) ²	(NIM) ²	(ROA)*(NIM)
2011	0.0474	0.0896	0.00224676	0.00802816	0.00424704
2012	0.0518	0.1166	0.00268324	0.01359556	0.00603988
2013	0.0573	0.1133	0.00328329	0.01283689	0.00649209
2014	0.0579	0.1109	0.00335241	0.01229881	0.00642111
2015	0.0474	0.0924	0.00224676	0.00853776	0.00437976
2016	0.0447	0.1006	0.00199809	0.01012036	0.00449682
2017	0.025	0.0961	0.000625	0.00923521	0.0024025
Σs	0.3315	0.7195	0.016436	0.074653	0.034479

Source: Research Findings

$$\delta_0 (NIM) = \frac{[(NIM)]IMNI(ROA)*(NIM)]M[\Sigma(ROA)]*[\Sigma(NIM)^2]}{[I(NIM)]^2 In[\Sigma(NIM)^2]}$$

$$\delta_0 (NIM) = \frac{[0.7195]*[0.034479]-[0.3315]*[0.074653^2]}{[0.7195]^2 - 7[0.074653^2]}$$

$$\delta_0 (NIM) = -0.0123030210090477$$

$$\delta_4 = \frac{[(ROA)*(NIM)]-I\frac{[(NIM)]IMo(ROA)]}{\Sigma((NIM))^2 IM\frac{[I(NIM)]^2}{n}}}{\Sigma((NIM))^2 IM\frac{[I(NIM)]^2}{n}}$$

$$\delta_4 = \frac{\Sigma[0.034479]-\frac{[\Sigma(0.7195) \times \Sigma(0.3315)]}{7}}{\Sigma(0.074653) - \frac{[\Sigma(0.7195)]^2}{7}}$$

$$\delta_4 = 0.5804324490108437$$

4.6.5 The Regression Equation for ROA as it Regresses on Loan to Deposit Ratio (LDR) for NMB Bank

The equation is given by $ROA_{(LDR)} = \delta_0 (LDR) + \delta_5 (LDR)$

The calculations to establish regression equations will be conducted as follows.

Table 4.16 A Summary of ROA and LDR ratios for NMB Bank

Year	(ROA)	(LDR)	(ROA) ²	(LDR) ²	(ROA)*(LDR)
2011	0.0474	0.7058	0.00224676	0.49815364	0.03345492
2012	0.0518	0.6556	0.00268324	0.42981136	0.03396008
2013	0.0573	0.6828	0.00328329	0.46621584	0.03912444
2014	0.0579	0.7133	0.00335241	0.50879689	0.04130007
2015	0.0474	0.7494	0.00224676	0.56160036	0.03552156
2016	0.0447	0.7821	0.00199809	0.61168041	0.03495987
2017	0.025	0.7092	0.000625	0.50296464	0.01773
$\sum s$	0.3315	4.9982	0.016436	3.579223	0.236051

Source: Research Findings

$$\delta_0 (LDR) = \frac{[(LDR)]DRLD(ROA)*(LDR)]R[\sum(ROA)]*[\sum(LDR)^2]}{[D(LDR)]^2 D n[\sum(LDR)^2]}$$

$$\delta_0 (LDR) = \frac{[4.9982]*[0.236051]-[0.3315]*[3.579223]}{[4.9982]^2 - 7[3.579223]}$$

$$\delta_0 (LDR) = 0.0920965076650657$$

$$\delta_5 = \frac{[(ROA)*(LDR)]-D\frac{[D(LDR) DR.(ROA)]}{n}}{\sum((LDR))^2 DR\frac{[D((LDR))]^2}{n}}$$

$$\delta_5 = \frac{\sum[0.236051]-\frac{[\sum(4.9982) \times \sum(0.3315)]}{7}}{\sum(3.579223) - \frac{[\sum(4.9982)]^2}{7}}$$

$$\delta_5 = -0.066576674913879$$

Table 4.17: A Summary of constants and regression coefficients for NMB Bank.

S/N	ROA, NMB				
	CA	NPL	OER	NIM	LDR
δ_0	-0.0701369733578551	0.061266158402369	0.2594169425465811	-0.0123030210090477	0.0920965076650657
δ_1	0.5562792110280587				
δ_2		-0.4791491575619115			
δ_3			0.0862957631083948		
δ_4				0.5804324490108437	
δ_5					-0.0626576674913879

Source: Research Findings

From the general regression equation given by:

$$ROA = \delta_0 + \delta_1 (CA) + \delta_2 (NPL) + \delta_3 (OER) + \delta_4 (NLM) + \delta_5 (LDR) + \varepsilon$$

$$\beta_0 = \sum (\delta_0 (CA), \delta_0 (NPL), \delta_0 (OER), \delta_0 (NIM) \text{ and } \delta_0 (LDR))$$

Therefore:

$$\delta_0 = (-0.0701369733578551 + 0.061266158402369 + 0.2594169425465811 - 0.0123030210090477 + 0.0920965076650657) = 0.266539111$$

Thus giving $\delta_0 = 0.330339614247113$

ROA can now be obtained by substituting in the equation below, all the constants and coefficients obtained from the calculations made from 4.6.1 to 4.6.5 above.

$$ROA = \delta_0 + \delta_1 (CA) + \delta_2 (NPL) + \delta_3 (OER) + \delta_4 (NLM) + \delta_5 (LDR) + \varepsilon$$

$$ROA = [0.330339614247113 + 0.5562792110280587 (CA) - 0.4791491575619115 (NPL) + 0.0862957631083948 (OER) + 0.5804324490108437 (NLM) + -0.0626576674913879 (LDR) + 0.1]$$

Thus:

$$ROA = [0.330339614247113 + 0.5562792110280587 (0.2112) - 0.4791491575619115 (0.029) + 0.0862957631083948 (0.5121) + 0.5804324490108437 (0.1028) - 0.0626576674913879 (0.714) + 0.1]$$

$$\text{ROA} = [0.330339614247113 + 0.117486169369126 - 0.0138953255692954 + 0.044192060287809 + 0.0596684557583147 - 0.044737574588851]$$

Giving the value of ROA as 0.4930533995042163

$$\therefore \text{ROA} = 0.4930533995042163$$

It is evident from the above results that the credit risk, operational efficiency and asset management have significant impact on ROA. From the calculation, ROA for NMB Bank = 0.4930533995042163 and the ROA for CRDB Bank = 0.2421338365992039. Conclusively, it is an indication that NMB Bank generally are better positioned in productivity, income and management as compared to CRDB which has got a lower value for ROA.

4.7 Interpretation of the regression analysis results

Loans to deposits Ratio (LDR)

The results of the regression analysis show that the Deposits/Loans Ratio (LDR) is significant for CRDB Bank and is positively related to the bank's profitability. This ratio was included so as to show the impact of the liquidity of the banks on their profitability. The beta coefficient is relatively small but positive, meaning that if the banks increase the financing of the loans with deposits it will positively impact the ROA.

The results of the multiple linear regression analysis for NMB bank show that LDR is not significant to explain the bank's profitability. The NMB Bank therefore has a low loan to deposit ratio as compared to its counterpart.

Non- Performing Loans (NPL)

It has been observed in the multi-linear regression that the NPL ratio is significant for NMB Bank while this factor is not significant to explain the profitability for CRDB Bank. This implies that CRDB Bank had a high level of NPL ratio in recent years, meaning a bad quality of the loan portfolio as compared to NMB. This may be associated with fact that the portfolio quality has deteriorated in recent years and even though the increase in the rate of NPL was smaller compared to previous years.

Operating Efficiency Ratio (OER)

This variable is observed to have a significant influence for both banks and it is statistically significant at 0.05 levels. Assets management means assets utilization ratio. The ratio describes how efficient managers are using assets to generate profits. Therefore better asset management and reduced operating expenses will significantly lead to financial profitability in the banking industry.

Net interest Margin (NIM)

Management quality which is represented as Interest Income over Interest expense is statistically significant at the level of 10 % for CRDB Bank. Therefore there is a direct link between NIM and profitability. Interest Income is the largest portion of all revenues in the banking system. According to this model, any change in this variable leads to an increase or decrease in Net Interest Margin. On the other hand this variable was observed not to be significant on the profitability of NMB Bank, implying that NMB Bank has lower earning in terms of interest rate charged on the loans.

Capital Adequacy Ratio (CAR)

The coefficient on the capital ratio is positive and significant for NMB Bank but was observed not to be significant for CRDB Bank. This is consistent with the comparison in the first objective that NMB performed well and was observed to have a high capital ratio. A high capital ratio improves the overall bank's profitability and its ability to enhance credit - worthiness while reducing the funding costs.

The capital ratio indicates how much risk is covered by a bank's capital, which means the bank with a higher capital ratio is considered safer than that with a lower ratio. The bank's creditworthiness is therefore enhanced, and further benefits the bank by reducing the funding cost. Given this it is concluded that a higher capital ratio has a positive impact on a bank's profitability.

CHAPTER FIVE

DISCUSSIONS OF RESEARCH FINDINGS

5.1 Introduction

This chapter presents the analysis and discussion of findings in relation to the specific objectives of the study. Those specific objectives of the study were; to determine the influence of capital adequacy on financial profitability of the banking industry, to identify the influence of asset quality and management quality on financial profitability of the banking industry, to examine the influence of earning on the financial profitability of the banking industry and lastly to know the extent of the significance of influence on financial profitability in the banking industry among those factors

5.2 The determination of the influence of capital adequacy on financial profitability of the CRDB Bank

In determining the influence of capital adequacy on financial profitability of the banking industry, for the CRDB Bank, a regression analysis was done on how return on assets regresses on capital adequacy (in the previous chapter). The results of the calculations made from the data obtained from CRDB Bank between the years 2011 up to 2017, give a constant factor of $\beta_0 (CA) = 0.0188772400448559$ for the CRDB Bank; therefore using the alternative hypothesis, the researcher proves that there is a positive relationship between $ROA_{(CA)}$ and CA, showing that $ROA_{(CA)}$ changes $\beta_1 = 0.0420932738186855$ times as fast as CA. Where the capital adequacy is given by the leverage ratio or debt to asset ratio, this implies that the dependency of the CRDB bank on outside funding for operations positively affects the bank's assets.

5.3 The determination of the influence of capital adequacy on financial profitability of the NMB Bank

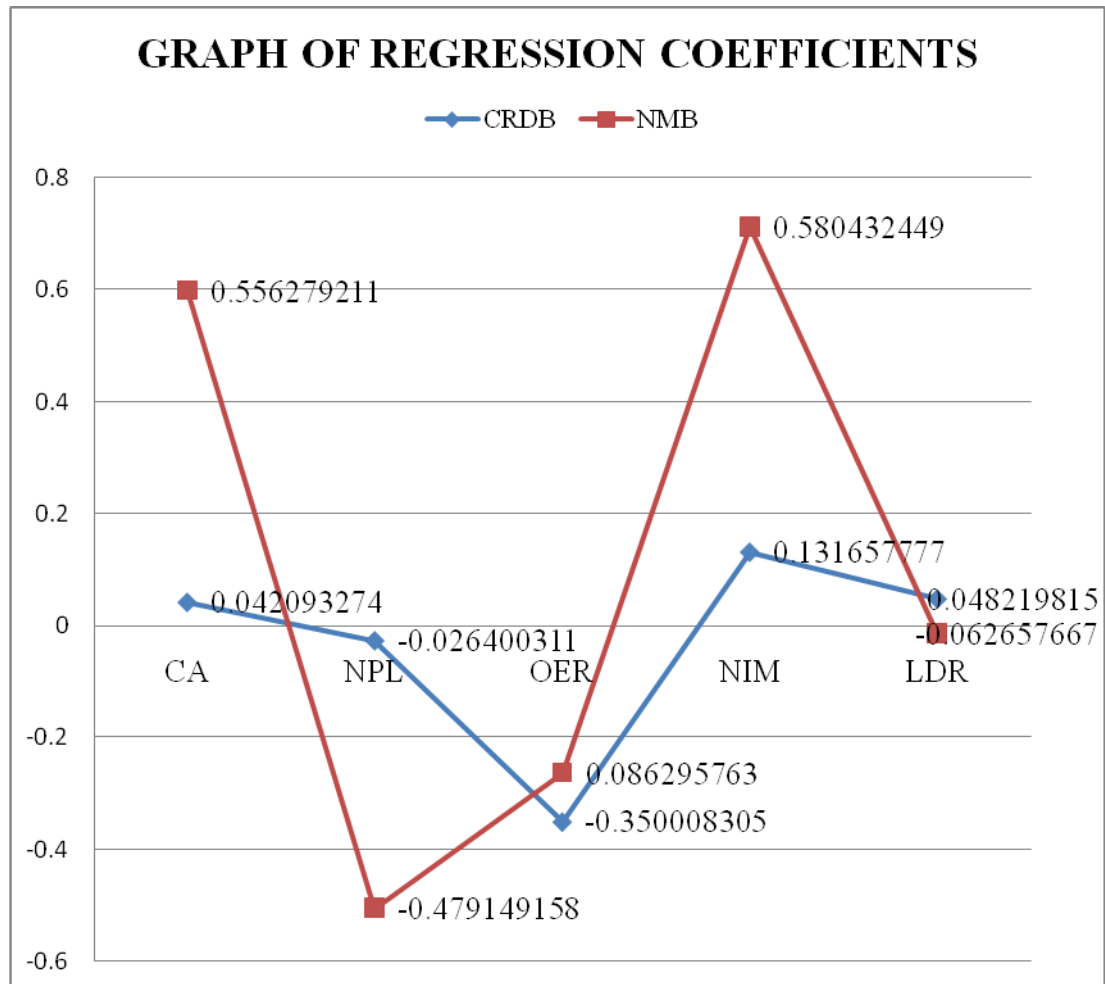
In determining the influence of capital adequacy on financial profitability of the banking industry, for NMB Bank, the regression analysis was done on how return on assets regresses on capital adequacy. The results of the calculations made from the

data obtained from NMB Bank for the years 2011 up to 2017, give a constant factor of $\delta_0_{(CA)} = -0.0701369733578551$ for the NMB Bank; therefore using the alternative hypothesis, the researcher proves that there is a positive relationship between $ROA_{(CA)}$ and CA, showing that a change in a unit of $ROA_{(CA)}$ changes $\delta_1 = 0.5562792110280587$ times as fast as CA. Where the capital adequacy is given by leverage ratio or debt to asset ratio or dependency ratio, this implies that the dependency of the NMB Bank on outside funding for operations positively impacts the bank assets.

5.4 Discussion of the findings of regression coefficients, significance level and the direction for CAMEL ratios

To make a clear comparison, a graph showing the coefficients of regressions was drawn as shown below.

Figure 5.1: A graph showing the regression coefficients for CRDB and NMB Banks



Source: Research Findings

From Figure 5.1 above it is evident that ROA has a positive coefficient correlation with Capital Adequacy Ratio (CA) for both CRDB and NMB Banks. The CA for NMB is bigger as compared to that of CRDB. Since the capital adequacy is very useful for a bank to conserve and protect stakeholders' confidence and prevent the bank from bankruptcy, the bank with a higher regression coefficient has a better chance of protecting its stakeholders' confidence and to prevent bankruptcy.

The analysis shows that CA for CRDB Bank regresses 0.0420932738186855 times in every unit change in ROA, while CA for NMB Bank regresses 0.556279211 times in every unit change in ROA. Therefore NMB Bank has a better chance in building customers confidence and bankruptcy prevention as compared to CRDB Bank. The

NPL for both CRDB and NMB Banks regresses negatively, meaning that they both contain negative regression coefficients.

The Non-Performing Loans Ratio (NPL) has the most significant negative influence on ROA. CRDB Bank has a smaller NPL regression coefficient compared to that of NMB Bank. From this analytical point of view, the CRDB Bank customers have got smaller loan extensions which are non performing as compared to the NMB Bank customers.

Operational Efficiency Ratio (OER) for both banks has a negative regression coefficient. The operation efficiency is another indispensable component of the CAMEL framework which brings a direct negative relation to the return on assets. The management of the OER requires adherence to set norms, being proactive in the dynamic environment, innovativeness and having administrative competency of the banks.

Both banks have positive regression coefficients for Net Interest Margin (NIM) and a positive regression coefficient for Loans to Deposits Ratio (LDR) for CRDB Bank. This means that CRDB Bank can obtain sufficient funds either by increasing liabilities or by converting its assets into cash quickly at a reasonable cost which will increase the return on assets.

Return on Assets (ROA) measures Internal-based performance of the banks, also known as the profitability or productivity ratio of the bank. In the analysis done, it is clear that ROA provides banks with a valuable tool to measure their progress against predetermined internal goals. The ROA ratio illustrates how well management of a Bank is employing the Bank's total assets or resources to generate more income (profit). The higher the return, the more efficient management or bank is utilizing its assets base.

ROA measurements include all of a business's assets including those which arise out of liabilities to creditors as well as those which arise out of contributions by investors. The inclusion of liabilities makes ROA even more valuable as an internal measurement tool. Another common internal use for ROA involves evaluating the benefits of investing in a new system versus expanding a current system. The best choice will ideally increase productivity and income as well as reduced asset costs, resulting in an improved ROA ratio.

It is evident from the above results that the credit risk, operational efficiency and asset management have significant impact on ROA. From the calculations the, ROA for NMB Bank is 0.4930533995042163 and the calculated ROA for CRDB Bank is 0.2421338365992039. Conclusively, the results are an indication that NMB Bank generally are better positioned in productivity, income and management compared to CRDB which has got a lower value for ROA.

5.5 Comparison of financial profitability performance of CRDB and NMB Bank

According to the published annual reports of the two banks covering a period of seven years from 2011 to 2017, the data indicated that CRDB Bank had more resources at its disposal compared to NMB Bank. A comparison was done basing on customer deposits, loan portfolio and total assets of the banks for the 7 years from 2011 to 2017. The data as represented by financial profitability performance over the same period indicate that CRDB Bank's financial profitability performance was lower than that of NMB Bank which had fewer resources on a year-on-year basis. This is however influenced by the number of customers and the total assets owned by NMB bank in the period under review. In addition NMB had a very low average NPL of 2.9% (compare to 5% recommended by BOT) and a higher NIM both of which contributed to its profitability and thus explaining why NMB Bank consistently continued to record higher profitability than its counterpart CRDB Bank.

The high levels of ROA achieved by NMB Bank throughout the period can be attributed to better assets management strategies which resulted in higher returns than its competitor. The findings are supported by Tiisekwa, 2013 who argued that the performance of commercial banks largely depends on the quality of the assets held by them, and the quality of assets relies on the financial stability of their borrowers in terms of character, capacity, collateral and covenant (4Cs). Similar results were established by Pastory and Marobhe (2015), that highly capitalized banks should have high profits compared to those with low capitalisation. The main reason for this is the presence of bankruptcy costs, for a bank that is capitalized below its equilibrium ratio, the expected bankruptcy costs are relatively high, and an increment in capital ratio boosts the expected profits by lowering interest expenses on uninsured debt.

5.6 Factors determining profitability of commercial banks

With respect to this objective, it was observed that quality management, capital owned by the bank, total assets (bank size), liquidity management and earnings from interest were mentioned to be the factors influencing profitability.

Basing on the aspect of Bank size, respondents from CRDB argued that, from the fact that the bank has many branches in the country in which earnings and collection of revenues as well as low operation cost facilitate their performance. This was mentioned to be the major profit determinant of performance in CRDB bank. On the other hand, Quality Management was acknowledged as being the major determinant of bank performance for NMB Bank. However, this was revealed by respondents from NMB bank that, their management is efficient that facilitate to lower operation and lower NPL which in turn accelerates to better performance as compared to their counterpart.

However, capital adequacy ratio was observed to be significant to NMB, indicating that risk is covered within an institution as well as higher capital investment facilitates good performance. In connection to this scenario, the branch managers from NMB revealed that the bank had acquired a higher capital ratio that could enhance further benefits and a reduction of the funding costs. This is vice versa to the CRDB bank whose capital ratio was observed to be lower than that of NMB from 2012-2017.

With regard to the NIM which is determined by the earnings of the banks, NMB had lower earnings in terms of interest rate charged on the loans specifically in 2011, 2015 and 2017. This however implies that NMB bank earned lower interest from these years as compared to its counterpart. On the other hand CRDB Bank recorded the highest NIM in 2015 (8.61%) and the lowest in 2011 (6.42%). The findings however, imply that CRDB had indicative of good lending practices and prudent investing decisions leading to increased financial productivity from lending and investment activities as compared to NMB.

Liquidity management as an influential factor for profitability in the banking industry was determined to have positive impact in CRDB bank, as it increases the financing

of the loans with deposit. Therefore, CRDB has high loans to deposit ratios as compared to NMB Bank. In connection to this CRDB in the other side NPL for CRDB was revealed to be insignificant to influence profitability.

The results of this objective are similar to many studies by Pastory and Marobhe, 2015, Athanasoglou *et al.* (2006), (Javaid et al, 2011). (Al-Hassan et al. (2010). Their studies were investigating on the determinants of banks profitability. The results from these studies showed that banks profitability is influenced by the internal factors such as; capital adequacy, asset quality, liquidity and expenditure management.

Other studies by Louati et al. (2015), Smaoui et al. (2011) and Zeitum (2012) found that the effect of the inner components like bank's size, liquidity (reserves saved into current records), complete capital and holds, and the level of benefit sharing between banks, contributors and capital sufficiency impact the exhibition of the banks. In these investigations it was additionally recognized that intensity of the banks impact the presentation of the bank, though, Zeitum (2012) said operational productivity of the bank impacts the gainfulness of the bank. As indicated by the office hypothesis, proprietorship structure could be identified with bank's productivity. Anyway in a similar report by Zeitum (2012) it was discovered that outside possessed banks are portrayed by higher benefit pursued by private banks, while then again government claimed banks were seen as the most minimal in productivity. A few studies show a negative connection among capitalization and banks' productivity, this implies value and bank financing fill in as opposed to supplements. Mohd et al. (2013) in his investigation found that higher influence and enormous credits to resource proportions, lead to higher productivity. He likewise reports that outside claimed banks are progressively productive that local ones.

The study by Zhang and Dong, (2011) found that the major determinants of banks profitability are both banks specific factors (Loans, deposits, size and capital ratio) and the macroeconomics factors (GDP growth rate and interest rate).

5.7 The correlation of the determined factors on profitability of the banks

The data from the regression analysis revealed that all variables are significant and have a positive correlation with the banks' profitability. The operating efficiency ratio (OER) was determined to be statistically significant in both CRDB and NMB banks, this implied that the banks managers are keen to reducing operating expenses and to increasing total revenues to exceed expenses and thus lead to profitability of the banks. However it was observed that NPL and CAR do not significantly influence the profitability of CRDB Bank. On the other hand LDR and NIM were observed not to have a positive correlation with the profitability of NMB Bank.

Several studies have been conducted in various countries about the determinants of banks profitability and their correlation. Naceur, (2003) investigated the profitability determinants inside the Tunisian financial industry for the period from (1980–2000). Neceur found that high net premium edge (NIM) and productivity are related with banks that are exceptionally promoted, and that have enormous overheads. It was likewise discovered that full scale financial pointers such swelling and development rates have no effect on a bank's advantage edges and productivity.

The investigation by Athanasoglou et al. (2006) demonstrated that all bank explicit determinants significantly affect a bank's gainfulness and the macroeconomic determinants indicated a blended effect on productivity. Notwithstanding, opposite outcomes were proposed by Heffernan and Fu (2008), the discoveries demonstrated that bank size isn't a significant factor in clarifying execution, nor can execution contrasts among various sorts of banks be credited to measure impacts.

Different thinks about with opposite results are those by Uhomoibhi, (2008) who led an exploration examining the determinants of bank gainfulness in Nigeria. The examination was proposed to recognize critical macroeconomic determinants of bank gainfulness. A board informational index which was contained 1255 perceptions of 154 banks over the period from 1980-2006 was utilized. A relapse investigation was performed and the outcomes indicated that genuine loan fees, swelling, money related strategy, and conversion scale system are critical macroeconomic determinants of bank benefit in Nigeria. The discoveries likewise demonstrated that the financial segment improvement, securities exchange advancement, and money

related structure have immaterial effect on productivity. Another study was directed by Nguyen, (2011) about the market fixation and different determinants of bank benefit utilizing proof from 28 monetarily changed nations in the period from (1997 – 2004). The outcomes in the wake of performing relapse examination recommended that both Return on Assets (ROA) and Pre-charge Profits are firmly identified with the degrees of capital sufficiency, cost proportion, credit hazard, and net intrigue salary. It was likewise discovered that ROE and Pre-charge benefits are decidedly identified with capital ampleness and non-interest income.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter presents the analysis and discussion of findings in relation to the specific objectives of the study. Those specific objectives of the study were: to determine the influence of capital adequacy on financial profitability of the banking industry, to identify the influence of asset quality and management quality on financial profitability of the banking industry, to examine the influence of earning on the financial profitability of the banking industry and lastly to know the extent of the significance of influence on financial profitability in the banking industry among those factors

6.2 Summary of the results

The study focused on the analysis of the profitability of commercial banks in Tanzania using CRDB Bank Plc and NMB Bank Plc. Key financial data of the these two banks were extracted from their annual reports covering a period of seven (7) years from 2011 to 2017. Key ratios (CAMEL) were then prepared from the financial data obtained from the annual reports, and based on these ratios the performance of the banks were analysed and compared using a regression analysis.

Basing on this analysis, it was established that both banks are profitable, have a strong capital base which is within the Bank of Tanzania prudential guidelines, and the management of their earnings and liquidity are adequate. On the aspect of assets quality, CRDB Bank appears to be struggling with NPLs whilst NMB Bank seems have an excellent management of its loan portfolio.

Both banks have their operating expenses under control, but more efforts are required to push the efficiency ratio further down below the 50% level.

In all the ratios, NMB Bank performance was better than that of CRDB Bank except in the earnings ratio category.

The key variables influencing the determination of profitability were found to be the capital adequacy, liquidity management, earnings and quality management. The variables that were observed to have a positive significance on the profitability of both banks were the Operating efficiency ratio (OER). While CAR and NPL were significant for NMB, NIM and LDR were found to be significant for CRDB Bank. The general summary of the findings of this study revealed a strong performance of NMB bank than CRDB bank in the study period.

However, Capital adequacy was determined by majority of respondents from NMB Bank, while bank size and resources were determined by majority in CRDB bank. On the other hand NMB had lower interest charged hence lower NIM as compared to CRDB bank.

6.3 Conclusion

Tanzania is now in its third generation of financial sector reforms. These changes have pulled in various players in the money related part and expanded challenge in the financial business. When business banks can deal with their credits portfolios and increment operational productivity, they will get gainful. In this way looking at the determinants of business banking benefit is critical as banks overwhelm the money related framework in light of the fact that the advancement of capital markets is still very low.

The study confirms that internal factors are significant in influencing the profitability of commercial banks. The empirical findings of this paper indicate that liquidity management, earnings from interest, quality management, Loans management, capital, and assets are critical determinants of profitability.

Therefore, it is concluded that NMB have shown greater profitability potential. Asset quality in terms of non-performing loans and proper management of overhead expenses tend to decrease profitability, but the other indicators such as asset quality have shown positive influence on profitability. Capital adequacy has also shown a positive influence. Therefore it is however indicated that external and internal factors

are critical components in influencing the profitability of commercial banks Tanzania.

6.4 Recommendations for further studies

This study has made use of the CAMEL Framework approach, which means there is still room for more research in this area by using different methods such as DEA which is thought to produce better results in measuring qualitative variables such as internal factors. The researcher investigated only bank-specific determinants (internal determinants) apart from other external determinants. There are some more external variables that can be included in the study to obtain better results.

This dissertation leaves room for further studies. Other researchers can apply triangulation using other methods or using a different time period to allow further comparison of results and improving credibility of results

In view of these findings, it is recommended that a follow up involving a deeper study aimed at understanding the external factors as well which could include inflation, GDP etc. The results of the proposed study would enable commercial banks to understand better what determines profitability and thus be able to address the issues accordingly.

The type of clarification for the degree of benefit would decide conceivable strategy suggestions and should be paid attention to. Since almost no exact work has been embraced exploring the focused conduct of Albanian financial frameworks, an experimental examination like the one directed above may yield bits of knowledge that could bear some significance with scholastics, investors, and strategy creators

For the purpose of this study, the researcher has taken only two large commercial banks in Tanzania. For future, researchers can make comparison between microfinance institutions and all the commercial banks.

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APPENDIX I: INTERVIEW GUIDE FOR COMMERCIAL BANK OFFICIALS

I. Background Information

1. Age
2. Experience in the position _____ (years)

II. Factors for commercial banks profitability

3. Do you know any of the conditions that facilitate banks growth?
4. What are the factors that are responsible for the profitability of commercial Banks?
5. Can you explain how internal factors contribute towards the profitability of banks?

APPENDIX II: A SUMMARY KEY FINANCIAL DATA

		2017	2016	2015	2014	2013	2012	2011	2010
		TZS' MILLION	TZS' MILLION	TZS' MILLION	TZS' MILLION	TZS' MILLION	TZS' MILLION	TZS' MILLION	TZS' MILLION
TOTAL ASSETS	CRDB Bank	5,806,107	5,322,594	5,335,705	4,124,729	3,545,220	3,073,763	2,713,124	2,304,750
	NMB Bank	5,506,359	4,951,075	4,580,091	3,881,995	3,280,186	2,795,878	2,170,250	2,110,903
TOTAL LIABILITIES	CRDB Bank	5,098,072	4,634,878	4,664,157	3,690,493	3,174,936	2,760,805	2,460,791	2,072,282
	NMB Bank	4,697,590	4,183,867	3,914,662	3,314,774	2,823,520	2,439,118	1,885,891	1,880,383
TOTAL DEPOSITS	CRDB Bank	4,318,783	4,170,449	4,250,704	3,398,063	3,062,307	2,718,630	2,411,887	2,036,767
	NMB Bank	4,272,298	3,748,580	3,569,471	3,011,884	2,588,705	2,362,636	1,836,669	1,842,089
TOTAL LOANS	CRDB Bank	3,129,747	3,499,266	3,531,926	2,784,056	2,304,098	1,943,775	1,639,964	1,418,761
	NMB Bank	3,029,779	2,931,708	2,674,806	2,148,297	1,767,669	1,548,994	1,296,225	1,010,091
NON PERFORMING LOANS	CRDB Bank	495,995	558,904	270,862	129,247	126,307	124,586	134,784	121,338
	NMB Bank	175,314	136,558	51,701	55,995	42,957	27,752	14,401	1,674
INTEREST INCOME	CRDB Bank	547,754	558,349	487,202	368,372	303,078	261,614	188,357	156,685
	NMB Bank	586,992	551,034	438,713	417,603	355,686	287,924	193,005	141,442

		2017	2016	2015	2014	2013	2012	2011	2010
		TZS' MILLION	TZS' MILLION	TZS' MILLION	TZS' MILLION	TZS' MILLION	TZS' MILLION	TZS' MILLION	TZS' MILLION
INTEREST EXPENSE	CRDB Bank	146,982	133,420	103,176	93,938	69,049	55,464	34,972	35,511
	NMB Bank	120,291	102,194	68,529	39,264	25,893	9,348	7,832	11,032
NET INTEREST INCOME	CRDB Bank	400,772	424,929	384,026	274,434	234,029	206,150	153,385	121,174
	NMB Bank	466,701	448,840	370,184	378,339	329,793	278,576	185,173	130,410
NON INTEREST INCOME	CRDB Bank	213,578	191,992	181,781	142,894	116,736	96,796	59,332	68,609
	NMB Bank	176,794	165,098	169,684	143,951	113,303	94,589	82,277	71,172
NON INTEREST EXPENSE	CRDB Bank	415,076	389,437	320,919	250,559	200,126	170,226	131,549	106,538
	NMB Bank	374,596	362,274	309,611	281,110	231,467	202,573	152,912	121,463
TOTAL EXPENSES	CRDB Bank	562,058	522,857	424,095	344,497	269,175	225,690	166,521	142,049
	NMB Bank	494,887	464,468	378,140	320,374	257,360	211,921	160,744	132,495
NET PROFIT	CRDB Bank	30,809	63,770	122,373	95,304	83,445	80,215	37,277	46,355
	NMB Bank	93,494	153,825	150,208	155,555	133,638	97,401	71,839	53,981