DETERMINANTS OF PROFITABILITY OF COMMERCIAL BANKS USING CAMEL FRAMEWORK: A CASE OF TANZANIA

By

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This Dissertation is Submitted as a Partial Fulfillment of the Requirements for Award of the Degree of Master of Accountancy And Finance of Mzumbe University.

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CERTIFICATION

We, the undersigned, certify that we have read and here by recommend for acceptance by the Mzumbe University, a dissertation/thesis entitled **Determinants of commercial banks profitability using CAMEL framework: A Case of Tanzania,** in partial fulfillment of the requirements for award of the degree of Master of Accounts and Finance of Mzumbe University.

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DECLARATION

I, Fadhila Tiisekwa**,** declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

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DEDICATION

To all those I call family.

ABBREVIATIONS AND ACRONYMS

AIG	American International Group
BOD	Board of Directors
BOT	Bank of Tanzania
CAMEL	Capital adequacy, Asset quality, Management quality, Earnings, Liquidity
CAR	Capital Adequacy Ratio
CRDB	CRDB bank PLC
DBS	Directorate of Banking Supervision
DSE	Dar es Salaam Stock Exchange
EAC	East African Community
FI	Financial Institution
FSSA	Financial System Stability Assessment
FSR	Financial Stability Report
GFC	Global Financial Crisis
GDP	Gross Domestic Product
LDR	Loans to Deposits ratio
NBC	National Bank of Commerce
NIM	Net Interest Margin ratio
NMB	National Microfinance Bank
NPL	Non-Performing Loans ratio
OER	Operating Expenses Ratio
PAR	Portfolio at Risk
ROA	Return on Assets
ROI	Return on Investment
SAP	Structural Adjustment Program
SSA	Sub-Saharan Africa

ABSTARCT

The study primarily aims at determinants of profitability of commercial banks in Tanzania applying CAMEL frame work. This study compares the financial performance of three major banks CRDB, NBC and NMB. The three banks are also ranked based on a CAMEL rating system. The study is undertaken in attempt to fill in the existing research gap, also to confirm the role played by internal factors to determine profitability and last but not least to provide information that can be used as a basis for comparison with different studies.

This study involves the analysis of commercial banks operating in Tanzania for a period of 7 years, from 2006 to 2012. Financial ratios in the context of CAMEL framework, which include; Capital Adequacy, Asset Quality, Management Quality, Earnings and Liquidity were applied. The research uses the data published by the sample banks in their annual reports and financial statements. Descriptive statistics were applied in analyzing the data, followed by deriving of CAMEL ratios and rating them and then correlation analysis was performed and finally regression was applied.

The dissertation is organized into five chapters. Chapter one, problem setting; Chapter two deals with literature review which includes theoretical review, empirical review and conceptual framework. Chapter three is the research methodology; Chapter four is concerned with data analysis, findings and discussion and Chapter five gives the conclusion and recommendations.

The CAMEL model predicts 51.74% of ROA; this calls for a more robust way of determining profitability to include external factors. NMB which is 50% foreign owned and 30% government owned proved to out rank the other two major banks CRDB and NBC. The study reveals that the profitability of commercial banks as measured by ROA is significantly determined by quality of assets. In order to improve profitability; credit information should be improved, and banks can opt to diversify their products so that they do not heavily rely on loans.

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CHAPTER ONE
PROBLEM SETTING

1.1 Introduction

An economy's financial sector is critical to its overall development. Banking systems and stock markets play pivotal role in this process acting as intermediaries in balancing the funds of the economy by transferring from surplus areas to required areas enhancing economic growth enabling effective employment of resources of the country for productive purposes. Strong financial systems provide reliable and accessible information that lowers transaction costs, which in turn bolsters resource allocation and economic growth. Indicators here include the size and liquidity of stock markets; the accessibility, stability, and efficiency of financial systems; and international migration and workers/remittances, which affect growth and social welfare in both sending and receiving countries (World Bank Group, 2012). This means poor banking systems hinder economic growth, due to inhibited allocation of resources. The financial sector comprises of banks, investment funds, insurance companies and real estate.

In the Tanzanian financial system, banking institutions are the major players, accounting for about 75% of total assets of the system. Effective supervision of the banking sector is an essential component of a strong economic environment. The primary objective of supervision is to ensure that banks and financial institutions operate in a safe and sound manner and that, they hold capital and reserves sufficient to absorb risks that arise in their operations. While the cost of effective banking supervision is indeed high, the cost of poor supervision may be even higher. Therefore, strong and effective banking supervision is essential for maintaining stability and confidence in the financial system. Public confidence is a critical aspect to any financial system (DBS report, 2010).

A world without banking systems is un-imaginable, especially in this era of globalization, numerous innovation and technological advancement; furthermore the world would not have reached this stage of development this fast without the support of the financial sector.

1.1.1 Tanzania Banking Sector

By 2013, according to the BOT website publication, the banking sector comprised of 32 commercial banks. As the banking institutions hold about 75 percent of the financial assets as stated before, the linkages between the banking sector and the macro economy are perceived to be particularly strong, giving rise to potential concerns about systemic risk and financial stability. As part of its mandate to ensure the stability and soundness of the banking sector, the Bank has subscribed to international prudential and regulatory standards but adapted them to the domestic specificities. With financial stability mandate in mind, the Bank of Tanzania's (BOT) supervising banks on a consolidated basis, reflecting the way banking institutions themselves manage risks and, in particular, recognizing the possibility of contagion risk within a banking group. Indeed, the regular on-site examination of banks complemented by close off-site surveillance plays a major role in detecting early warning signals that would require prompt corrective action by the responsible bank. This approach has, over the years, contributed significantly to mitigate the level of risks in the banking system.

By end of June 2010, the banking sector was made up of 41 banking institutions, out of which 19 were foreign owned. The banking system showed a high concentration of total assets - 57 percent - being held by four big banks, while 43 percent were accounted for by the remaining 37 banks. Generally, foreign owned banks in Tanzania account for about 48 percent of the banking industry's total assets. Despite this significant market share, the effects of the Global Financial Crisis (GFC) had a limited direct impact to foreign owned banks, notwithstanding the credit crunch suffered by some of their parent companies in Europe and America.

The cushion over external exposure is mainly attributed to the structure of the Tanzanian prudential financial sector regulation system, and the existing limitations on foreign currency placements or foreign investments by Tanzanian firms (FSR, 2010).

1.1.2 Tanzania banking sector reforms

In Tanzania, poor performance of the state-owned financial sector in late 1980s forced the government to search for new policy directions. NPLs were above 65 percent of the loan portfolio, fiscal and financial operations were not separated, and an appropriate

regulatory framework was missing. In 1990, a special presidential commission recommended: (i) increasing competition by encouraging entry of foreign banks; (ii) strengthening the existing financial institutions; (iii) developing management accountability; and (iv) recovering NPLs. Based on these, the government has issued a policy statement on financial sector reform with the aim of creating a market-based financial system, efficient in mobilizing and allocating resources and supporting long-term economic growth (Cihak and Podpiera, 2005).

Cihak and Podpiera (2005) further reveal that a new regulatory framework was introduced, organization and financial restructuring of the two largest (formerly state-owned) banks, NBC and Cooperative and Rural Development Bank (now CRDB), has been implemented and the sector has been open to financial services providers. The new Banking and Financial Institutions Act approved in the second half of 1991 allowed licensing of new banks, including subsidiaries of foreign banks. The first major foreign bank (Standard Chartered) started operations in 1992, with other international banks following—Stanbic (1993), Citibank (1995), and Barclays (2000). Several other smaller foreign banks set up their subsidiaries during 1995–2002. The authors report that history of non-repayment leads to slow replacement of NPLs and hence necessitates, the banks to accumulate extensive holdings of government paper and off-shore deposits in foreign exchange, limiting the amount of credit available to the private sector.

Having recognized the need to create an environment more conducive to lending and financial sector development overall, the authorities have recently introduced wide-ranging reforms in the areas of legal, judicial, and information infrastructure, including the Land Act 1999 and the Companies Act 2002. Judicial and court reform is one of the basic priorities to which increasing attention is being paid. However, comparatively little progress has been made, with training and facilities still remaining in need of special attention. Furthermore, land registries, company registries, and registries of mortgage interests are inefficient, and considerable improvements are needed before they will provide a useful information basis for credit decisions (Cihak and Podpiera, 2005).

Since the introduction of Structural Adjustment Programs (SAP) in the late 1980's, the banking sector worldwide has experienced major transformations in its operating environment. Countries have eased controls on interest rates, reduced government involvement and opened their doors to international banks (Ismi, 2004).

Pastory and Qin, (2012) wrote that commercial banks in Tanzania have gone into significant changes after the liberalization of the banking system in 1991.The reforms removed barriers to entry of commercial banks and supported the improvement of institutional framework and more efficiently the performance of commercial banks, with this it has affected the profitability of commercial banks and increased banking competition.

Financial sector assets have expanded rapidly in the past decade from a total of TZS 1,637 billion at end of December 2001 to TZS 10,040 billion in December 2009. The growth was led by private sector deposits in the banking system.

The Financial Stability Report (FSR) of 2010 also reveals that while the banking sector plays a dominant role in the financial system stability due to its intermediation function, internationally, there is a growing convergence between banking and other sectors as banks broaden their activities to include other financial services. In the EU region, banks are licensed under universal banking laws which allow them to expand their services to include banking, pension, insurance, securities and other financial services. However, the existing banking laws in Tanzania restrict banks from engaging in non-banking financial services. Banks which intend to diversify into other financial services are required to establish separate subsidiaries. The separation of banking services from other financial services provides some cushion against the transmission of shocks across different sectors in the financial system. Nevertheless, there is a significant inter-linkage across the financial sub-sectors in Tanzania. The linkages also imply that reforms that are undertaken by the other financial sub-sector will ultimately affect the performance of the banking sector.

Following the GFC, regulations and policies; monetary and fiscal, have been revised.

The onset of the GFC became a wake-up call to many countries to re-examine their macroeconomic management frameworks and policies in order to determine their adequacy in terms of safeguarding financial stability by maintaining a robust, efficient and resilient financial systems. The re-evaluation of policy frameworks centered on the three major processes involved in financial stability analysis one being surveillance of the financial system (FSR, 2010).

Despite the GFC the Directorate of Banking Supervision (DBS) report of 2010 reveals that during the year 2010, the Tanzanian banking sector performed quite well. The financial system in general and the banking sector in particular, was resilient enough to absorb shocks of the crisis. Strong performance was attained in terms of earnings, liquidity, capital adequacy and quality of assets. The banking sector sector's contribution to GDP had grown from 6% in 2009 to 7% in 2010. Good progress was made in terms of outreach as banks opened more. The FSR of 2011 reveals that, besides interest income which accounts for about 50 percent of banks' profits, other major sources of bank earnings include foreign exchange gain from exchange rate movements – contributing about 13 percent of total income, and interest income from investment in government securities – accounting for about 10 percent. Generally, the banking sector continued to be profitable although the level of profitability has not recovered to pre-crisis levels. For the year ending June 2011, the banking sector recorded a decline of almost 50 percent in profits after tax. Specifically, profit after tax declined from TZS 104.6 billion in the year ending June 2010 to TZS 69.9 billion. The sharp decline in profitability in the banking industry can be associated with the increase in NPLs; narrowing of interest margin caused by the increasing competition; reduced earnings from foreign placements; and declining returns on government securities.

The banking sector is one whose performance is affected by the performance of all other sectors in the economy whether directly or indirectly. Any amendments to the fiscal or monetary policies will affect the banks performance, since the bank basically depends on customers to save (deposit) as one of the sources of loans, and to have savings they depend on other sectors to be doing well. If the monetary and fiscal policies are favorable then many investments will prosper and people should be able to save more and hence invest more.

FSR of 2010 shows that the Bank of Tanzania with regard to the banking regulations; follows international standards including those set out in the framework of the Basel Committee on capital adequacy. It is the Bank's resolve to maintain high quality banking supervision that conforms to international standards and best practices including improving supervisory standards through continuous upgrading of regulations in line with international standards such as those under Basel Capital Adequacy Framework (DBS, 2010).

The Bank of Tanzania conducts regular review of the legislative and regulatory measures in use for the banking sector and the national payment system so as to identify areas that need enhancement. The review process has led to – among others - the enhancement of the required minimum core capital for banks from TZS 5.00 billion to TZS 15.00 billion, with a view to strengthening the capability of the banking system to absorb potential losses. The proposed changes are also expected to improve solvency level of the industry, encourage consolidation and mergers, and further promote competition in the banking sector.

The current financial crisis has generated a range of proposals and recommendations for strengthening the resilience of the global financial system, which might be adapted by countries at national level. The envisaged regulatory reforms are centered on: strengthening capital; enhancing transparency and valuation; and strengthening governments' responsiveness to risks in the financial system. The key items on the international financial regulatory agenda include: changes to capital requirement, appropriate oversight and systemic crisis management and resolution frameworks.

According to the new proposal by the Basel Committee of Banking Supervision on capital known as "Basel III", the Committee seeks to increase the quality and quantity of capital (especially Tier 1 capital) and to discourage banks' excessive leverage and risk taking. Under this new proposal, among others, banks are required to maintain a minimum core capital ratio of 6.0 percent of risk-weighted assets and an overall total capital ratio of 8.0 percent. In addition to minimum capital requirements under the new proposal, banks will have to hold a capital conservation buffer of 2.5 percent of risk-weighted assets to withstand future periods of stress. With the conservation buffer, the

new minimum ratio to risk-weighted assets for core capital is 8.5 percent and 10.5 percent for total capital. At this juncture, it is worth to take note of progress made by Tanzania with regard to strengthening regulatory capital requirements. Currently, the Bank of Tanzania requires banks to maintain core capital ratio of 10.0 percent to risk-weighted assets and 12.0 percent for total capital, both of which are already above the new Basel requirements (FSR, 2010).

Under these new circumstances and reforms including the minimum capital requirement, the new regulatory frameworks, increased competition etc. that have taken place and are on-going in Tanzania, the banks survival prosperity is closely associated with its efficiency in managing the affairs for getting sufficient profits. Studies on determinants of profitability always help in getting feedback and policy improvement for further betterment.

1.2 Background of the Problem

Despite liberalization and reforms, interest rates spreads in most African countries still remain high. In the last two decades studies have shown that commercial banks in Sub-Saharan Africa (SSA) are more profitable than the rest of the world with an average Return on Assets (ROA) of 2 percent (Flamini *et al.*, 2009). For the period of this study CRDB bank has reported a ROA of as high as 4.5% in 2008 and the average ROA of approximately 3% for all the commercial banks under study. Ongore and Kusa, (2013) argue that one of the major reasons behind high return in the region was investment in risky ventures. The other possible reason for the high profitability in commercial banking business in SSA is the existence of huge gap between the demand for bank service and the supply thereof. That means, in SSA the number of banks are few compared to the demand for the services; as a result there is less competition and banks charge high interest rates. This is especially true in East Africa where the few government owned banks take the lion's share of the market. The net interest rate spread is a key determinant of a financial institution's profitability (or lack thereof). In simple terms, the net interest spread is like a profit margin. The greater the spread, the more profitable the financial institution is likely to be; the lower the spread, the less profitable the institution is likely to be. In Tanzania, there is currently no fully owned government commercial bank, the Government gave up most of its shareholding in

major banks after it started the privatization process in 2005 but two among the five largest commercial banks, NMB and NBC have approximately 30% government interest to date. This poses the question of whether Tanzania banks are profitable due to exceptional efficiency or are the customers charged higher interests than they should be for the high returns of the commercial banks. Another question one would ask is whether the risk of the ventures the banks engage in, is as high as the interest rates they set? Are the non-performing loans a product of a poor operating environment of the sector and not just poor credit policy or human resource employed by the banks? According to Sacerdoti (2005) in his paper reports, there is a wide concern that bank spreads are too high in Africa. Analysis conducted in a number of Financial System Stability Assessment Reports (FSSA) indicate that the causes of the spreads in most SSA banking system are the relatively large share of NPLs, high operating costs, difficulties in obtaining and using collateral, and the absence of efficient judicial procedures to facilitate loan recovery. So the banks charge high interest rates on lending to compensate them for the loans they do not recover and the high risk they take. Does the net interest margin determine profitability?

In a country where the financial sector is dominated by commercial banks, any failure in the sector has an immense implication on the economic growth of the country. This is due to the fact that any bankruptcy that could happen in the sector has a contagion effect that can lead to bank runs, crises and bring overall financial crisis and economic tribulations(Ongore and Kusa, 2013). Banking crisis could entail financial crisis which in turn brings the economic meltdown as happened in USA in 2007 (Marshall, 2009.) That is why governments regulate the banking sector through their central banks to foster a sound and healthy banking system which avoid banking crisis and protect the depositors and the economy (Shekhar, 2012).

We are going through the phase of after "THE GREAT CRASH OF 2008" that is usually linked with the fall of two financial tycoons The Bear Stearns Companies Inc and Lehman Brothers Holdings Inc who were considered to be the major players of the market in United States from last 100 years and a controversial narrow escape of American International Group (AIG) Inc through government bailout. These bankruptcies were not anticipated or tracked by regulator rating system or external

rating agencies. The Great Depression 1930‟ s is also an example of economic crisis caused by the banking sector and financial institutions that left behind 9 million peoples losing their savings and more than five thousand banks to closed (lal, 2010). Notwithstanding the above, the great depression of the 1940s coupled with bank failures experienced in the United States drove considerable attention to bank performance. Since then, the attention on bank performance has grown from levels to levels (Heffernan, 2005).Thus, to avoid the crisis due attention is given to banking performance.

Profitability of commercial banks is pro foundation for product innovation, diversification and efficiency of the commercial banks (Hempell, 2002). The stability of commercial banks as whole in the economy depends on profitability level. More profitability level has tendency to absorb risks and shocks that commercial banks can face. Moreover profitability is the perquisite condition for the efficiency of commercial banks (Pastory and Qin, 2012). Empirical evidence from detriguache (1999) has shown that the soundness of commercial banks performance depends on profitability. Francis (2006) has indicated that markets reforms in the sub-Saharan Africa has worsen the profitability of commercial banks due to high level of non-performing loans. This is contradictory to the early study of Chijoriga (1997) who indicated that market liberalization is essential for high level profitability of commercial banks. According to the Bank of Tanzania (2010), the commercial banks profitability has improved to the greatest extent and most of them are above the regulatory requirements, the greatest profitability earned by these commercial banks indicates that the internal factors has played a great role toward this profitability. This study therefore aims to confirm the role played by internal factors in determining profitability, whether it is due to the efficiency of commercial banks or otherwise. There aren’t many studies carried out in Tanzania on the determinants of commercial banks profitability that have taken the CAMEL approach which represents internal factors, this study is unique in that sense. Given all the reforms that have taken place over the years, the determinants of profitability may have changed and this study aims to find out what internal factors are significant to profitability of commercial banks.

1.3 Statement of the Problem

Many studies have been under taken about commercial banks profitability in Africa but very few have been specific to Tanzania. Pastory and Qin (2012) did a study on the commercial banks profitability position: The case of Tanzania, where they used three major banks, CRDB, NBC and NMB. Three ratios where used in their analysis, including return on average assets, net interest income to average bearing assets and non-interest expenses to average assets. This study aims to fill the existing research gap using a CAMEL approach.

The study also aims to confirm the role played by internal factors in determining profitability of commercial banks. It can thus be derived whether the high profitability of commercial banks in Tanzania compared to the rest of the world is on account of its efficiency or high interest rates charged to customers.

The CAMEL framework is a widely used model according to Baral (2005) and according to Gopinathan (2009), financial ratios analysis measures various aspects of performance and analyses fundamentals of a company or institution. Ho and Zu (2004) have reported that the evaluation of a company's performance has been focusing the operational effectiveness and efficiency, which may influence the company's survival directly. Elyor (2009) and Uzhegova (2010) have both successfully used the CAMEL model to examine the factors affecting banks profitability. This study can therefore be used for comparison with other literature that has taken the same approach. It is also measures the performance of the banks, and thus can used as a basis to predict survival of the banks.

For the purpose of this study, three major banks will be used, CRDB, NBC, and NMB. The three banks hold a significant market share of the commercial banks in Tanzania.

1.4 Objectives

The main objective is to determine the factors that affect commercial banks profitability in Tanzania.

The specific objectives include;

- To compare the financial performance of major commercial banks with different ownership structures based on their CAMEL ratios
- To rank the sample banks on the basis of CAMEL rating.
- To determine whether capital adequacy, asset quality, management, earnings performance or liquidity affect the profitability of commercial banks

1.4 Significance of the Study

There is little information about commercial banks performance in Tanzania that would be important for policy guidance of the sector. In addition, the world specifically the banking institutions, is going through a global financial crisis evidenced by the current banking failures in the developed countries and the bailouts the that could have been prevented to an extent by constant financial check –up; hence studies like these can detect early warning signs that will help the commercial banks combat and prevent problems that would otherwise lead to their collapse. Thus, to take precautionary and mitigating measures, there is dire need to understand the performance of banks and the determinants of profitability.

Not only the commercial banks but also any FIs require regular health check-up to maintain the confidence of private sector in financial system of the country and protect the interest of depositors, lenders, shareholders and other stakeholders.

This study is also significant as its results will be applicable in enhancing commercial banks sustainability. Studies that seek to investigate the performance of banks and their various determinants are steps in the right direction to identifying the means of promoting the survival and growth of the sector that serves as the backbone of the financial system of developing economies (Esther and Mathew, 2012).

Banking investments among individual investors are increasing as banks continue to enlist in the DSE and a basic CAMEL rating knowledge can help them gain better understanding about their investment on their own rather than seeking the investment agencies. It will assist the investors in understanding the current situation of the banks and their strengths and weaknesses. This helps them make precise and timely decisions towards their investment.

1.5 Limitation of the Study

The study is limited to three (3) banks only. There are resource constraints since I am a self-sponsored student and this limits my ability to inquire into deep search of data. There is also the issue of confidentiality of some of the banks data, due to the nature of their business and this limits the study. Last but not least is the inconsistency in the publishing of the banks data, which limits the consistency of the research layout in a few cases.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter is written in consideration of the critical points of current knowledge including theoretical, substantive findings as well as methodological contributions (empirical review) relative to this topic.

The chapter discusses what theories say in relation to the components of my research; this includes mainly defining the key concepts about banking and theories about the CAMEL framework. I also reveal what other researchers who have done similar studies in different locations using different methods have found out. This created a basis for the conceptual framework, how to operationalize my work and form a basis for prediction.

2.2Theoretical Literature Review

In the theoretical literature review about profitability, commercial banks, the meaning of CAMEL and its components, the CAMEL rating base and information about the sample banks are presented.

Concept of profit and profitability

Profit is the surplus remaining after total costs are deducted from total revenue, and the basis on which tax is computed and dividend is paid. It is the best known measure of success in an enterprise.

Profit is reflected in reduction in liabilities, increase in assets, and/or increase in owners' equity. It furnishes resources for investing in future operations, and its absence may result in the extinction of a company. As an indicator of comparative performance, however, it is less valuable than return on investment (ROI). Profit is also called earnings, gain, or income (Business Dictionary, 2013).

Profitability refers to the potential of a venture to be financially successful. This may be assessed before entering into a business or it may be used to analyze a venture that is currently operating. Although it may be found that one set of factors is not likely to be

successful or has not been successful, it may not be necessary to abandon the venture. It may instead be feasible to change operational factors such as pricing or costs.
There are three basic situations that can describe a business' financial situation. It can be profitable, it can break even, or it can operate at a loss. In most cases, an organization's goal is to make a profit.

Concept of a Commercial Bank

A bank is a financial institution and a financial intermediary that accepts deposits and channels those deposits into lending activities, either directly by loaning or indirectly through capital markets. A bank is the connection between customers that have capital deficits and customers with capital surpluses.

Due to their influence within a financial system and an economy, banks are generally highly regulated in most countries. Most banks operate under a system known as fractional reserve banking where they hold only a small reserve of the funds deposited and lend out the rest for profit. They are generally subject to minimum capital requirements which are based on an international set of capital standards, known as the Basel Accords.

An institution which accepts deposits, makes business loans, and offers related services. Commercial banks also allow for a variety of deposit accounts, such as checking, savings, and time deposit. These institutions are run to make a profit and owned by a group of individuals, yet some may be members of the Federal Reserve System. While commercial banks offer services to individuals, they are primarily concerned with receiving deposits and lending to businesses.

The CAMEL approach

CAMEL framework often used by scholars to proxy the bank specific factors (Dang, 2011).The Basle Committee on Banking Supervision of the Bank of International Settlements (BIS) has recommended using capital adequacy, assets quality, management quality, earnings and liquidity (CAMEL) as criteria for assessing a FI in 1988 (ADB 2002). The sixth component, market risk (S) was added to CAMEL in 1997 (Gilbert, Meyer and Vaughan 2000). However, most of the developing countries

are using CAMEL instead of CAMELS in the performance evaluation of the FIs. The central banks in some of the countries like Nepal, Kenya use CAEL instead of CAMELS. The CAMELS framework is a common method for evaluating the soundness of FIs. This system 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). Monetary authorities in the most of the countries are using this system to check up the health of an individual FI. In addition, International Monetary Fund also is using the aggregated indicators of individual FIs to assess the financial system.

The BOT also applies CAMEL in the supervision of the financial institutions; the banking supervision says apart from the risk framework review of the five key components of the institutions, that is Capital adequacy, Asset quality, Management quality, Earnings capability and Liquidity (CAMEL) at least once a year for every institution done on site. In addition, supervisors do verify compliance with laws and regulations and assess the effectiveness of the institutions' internal control system.

The purpose of CAMELS ratings is to determine a bank's overall condition and to identify its strengths and weaknesses: Financial, Operational and Managerial. The scale is from 1 to 5 with 1 being strongest and 5 being weakest. Banks with a rating of 1 are considered most stable; banks with a rating of 2 or 3 are considered average, and those with rating of 4 or 5 are considered below average, and are closely monitored to ensure their viability. STRONG: indicative of performance that is significantly higher than average. SATISFACTORY: reflects performance that is average or above. FAIR: represents performance that is flawed to some degree. MARGINAL: reflects performance that is significantly at below average. UNSATISFACTORY: indicative of performance that is critically deficient and in need of immediate remedial attention. Each bank is accorded a composite rating that is predicated upon the evaluation of the specific performance dimensions. The composite rating is also based upon a scale of 1 through 5 in ascending order of supervisory concern. The CAMELS rating components have the following weights: Capital Adequacy 20%, Asset Quality 20%, Management 25%, Earnings 15%, Liquidity 10% Sensitivity to market risk 10% (Parveenbari, 2010).

The CAMELS framework system looks at six major aspects of an FI: capital adequacy, asset quality, management soundness, earnings, liquidity, and sensitivity to market risk (Hilbers, Krueger and Moretti 2000).

Capital Adequacy

Capital Adequacy shows the financial strength of a bank, and this financial strength usually shows by bank through Capital Adequacy ratio (CAR). CAR = Tier I + Tier II/Risk weighted Assets. This ratio determines the ability of the bank to meet with obligation on time and other risks such as operational risk, credit risk, etc. Tire I is a type of capital, it is a composed of core capital or we can say own capital which consists primarily of common stock, preferred stock, retain earnings. Tier II is a supplementary form of capital of banks. Items include in tier II Capital are, undisclosed reserves, subordinate term debt, general provision, revaluation reserves (Christopoulos, et al, 2011, p. 12).

Asset Quality

Quality of bank's assets is related to the left side of its balance sheet. Usually top management of the bank is concerned mostly with quality of the loans they provided to their customers as it provides earnings to their bank. Assets quality and loan quality are two words that have same meaning but most often they are used inter changeably. Quality of the assets as its affects both cost to the banks and economies of scales for the bank (Bernstein, 1996, p. 1). Assets that have low quality usually have higher possibility to become a Non-Performing Loan. Non-Performing loans are usually bad debts that are in default or they are near to be in default. There is no specific standard for the banks across the globe that elaborates which assets to be included in non-performing loans, but in Pakistan those which are in default for more than three months are included in non-performing loans (Chang, 2006).

Management Quality

It is difficult to determine the sound performance of management of the bank. For individual institution it is not a quantitative factor it is primarily qualitative factor. However to determine the soundness of the management we took the ratio which is, Management expenses/total earning. The lower ratio, the better for bank since it shows that management has good ability to handle the bank operations (Baral, 2005, p. 44).

Earnings

According to Couto and Brasil, it is necessary for the banks to generate sufficient earning to stay in the market for a longer period of time, to make shareholders satisfied, protect and improve its capital (Couto and Brasil, 2002, p. 3). To measure earnings the ratios used are, Return on Assets, and Return on Equity. ROA = Net profit/total assets. This ratio avoids the volatility of earnings linked with unusual items, and measures the profitability of the bank; the higher the ratio, the greater the profitability. The second ratio is ROE = net profit/own capital. This ratio shows the efficiency of the bank, that how the bank uses its own capital in an efficient manner (Christopoulos, et al, 2011, p. 13).

Liquidity

To well manage liquidity of the financial institutions such as banks is a prime objective of its management. Liquidity is ability of a firm to convert its financial assets into cash most rapidly or in a quick succession or we can say availability of the funds to pay off all its financial obligations when they become due. Liquidity of a firm can be calculated by using liquidity financial ratios. There are several ratios that can be used to measure liquidity of the firm but in our research that is based upon the usage of CAMELS system, we used two liquidity ratios. These ratios are Loan to Total Deposits (L1) = Total Loans / Total Deposits and Circulating Assets to Total Assets (L2). (Bar and Zeb, 2011)Table 2.1 gives a summary of the components, ratios and implications of CAMEL.

Table 2.1: Components, ratios and implications of CAMEL

CAMEL component	Ratio(s)	Implications
Capital Adequacy	CAR Leverage ratio Debt to Assets ratio Dependency ratio	Shows dependency of 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 Loan loss ratio 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	Indicated 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 disturbing loans (in monetary terms) Indicates efficiency in disbursing loans
Earnings	Return on Equity Return on Assets Profit Margin Financial Cost Ratio Administrative cost ratio Operating Self-sufficiency Ratio Financial Self-sufficiency ratio	Indicator of efficiency of lending operations Shows ability of Institution to cover costs of operations which includes financial and non-financial expenses with internally generated income 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 Institution to meet projected near term obligations

Source: Authors own composition, 2013

CAMEL Rating Base

All six components of CAMELS rating model are rated on the basis of following criteria on the scale of 1 to 5. Component having rating 1 shows strong position while rating 5 indicates worst position of a bank in the particular component. Each component has a well thought out scale of rating based on the prevailing financial and economic conditions (Saltzman & Salinger, 1998). For this study I chose to adopt the rating base methodology of Babar and Zed (2011). This rating base is consistent with the ratios I have chosen under the CAMEL framework.

Key ratios of CAMELS rating system to evaluate the rating for different banks are capital adequacy ratios, asset quality ratios, management ratios, earnings ratios and liquidity ratios as shown in Table 2.2.

Table 2.2: Rating base of CAMELS components

CAMELS Rating Components	Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
Capital Adequacy Ratio	≥15%	12% - 14.99%	8% - 11.99%	7% - 7.99	≤6.99%
Assets quality Ratio	≤1.25%	≤2.5% - 1.26%	≤3.5% - 2.6%	≤5.5% – 3.6%	≥5.6%
Management	≤25%	30% – 26%	38% – 31%	45% – 39%	≥46%
Earnings (ROA)	≥1%	0.9% – 0.8	0.35 – 0.7	0.25 – 0.34	≤0.24
ROE	≥22%	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	≥50%	45% - 49.99%	38% - 44.99%	33% - 37.99	≤32%
Sensitivity Ratio	≤25%	30% - 26%	37% - 31%	42% - 38%	≥43%

Source: Babar and Zeb, 2011

Since the table 2.2 does not specify on the rating of NIM, the BOT standards as adopted by Pastory and Qin, 2013; are followed instead. Table 2.3 displays the BOT standards.

Table 2.3: BOT standards that account for 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, 2012

About The Banks

The following is information from the respective banks official websites about their profile, mission, vision, BODs and ownership structure.

NBC

NBC Ltd. was formed on 1st April 2000 when NBC (1997) Ltd. It was privatized and sold to ABSA Group Ltd. of South Africa. NBC (1997) Ltd. was itself born out of the nationalization of banks and financial institutions in Tanzania in 1967.Tanzania later deregulated banking in 1991. In 1997, a decision was taken to split NBC into three entities, namely NBC Holding Corporation, National Micro-finance Bank (NMB) and NBC (1997) Limited. This was the first step towards the privatization of NBC.

NBC Ltd. needs to be seen as a partner with government, and other organizations, in promoting the socio-economic development and prosperity of Tanzania. The government of the Republic of Tanzania has committed itself to transforming the economy of the country from being public-sector driven to being private-sector driven. To this end, privatization has been chosen as one of the key routes by government. Privatization entails that government is moving out of business - as in the management of companies - and promoting an enabling environment for economic growth and development as supported by the private sector.

Mission Statement

We are a caring financial services provider, partnering with all our stakeholders to create prosperity through a customer centric, innovative and diverse product offering

Vision

To be the 'Go-To' bank

Brand Purpose

Helping people achieve their ambitions in the right way

Shareholding Structure

1. ABSA Group Ltd.	55%
2. Government of the republic of Tanzania	30%
3. International Finance Corporation	15%

The NBC organization structure is currently not published

NMB

In 1997, the National Microfinance Bank Limited Incorporation Act established the NMB. In 2005, The Government of the United Republic of Tanzania started the privatization process and sold part of its shareholding (49%) to a consortium led by the CoöperatieveCentraleRaiffeisen-Boerenleenbank B.A. ('Rabobank Group'). In 2008, the Government reduced its share to 30% through the sale of shares to the general public in an IPO (16%) and to the NMB staff (5%). NMB became listed on the Dar es Salaam Stock Exchange on 6th November, 2008.

NMB is the largest bank in Tanzania, both when ranked by customer base and branch network. With over 143 branches we are located in more than 80% of Tanzania's districts. This broad branch network distinguishes NMB from other financial institutions in Tanzania. We are committed to sustaining and enhancing our branch network in order to provide access to capital to citizens in all areas of Tanzania, including the most remote.

Mission

Through innovative distribution, and its extensive branch network, NMB offers affordable, customer focused, financial services to the Tanzanian community, in order to realize sustainable benefits for all its stakeholders.

Vision

To be the preferred financial services partner in Tanzania.

Shareholding Structure

The current shareholders of NMB are:

1.CoőperatieveCentraleRaiffeisen-Boerenleenbank B.A "Rabobank Nederland" Rabobank	49%
2. Treasury Registrar (Government of Tanzania)	31.8%
3. Standard Chartered Bank (T) Nominee Limited	2.0%
4. National Investment Company Limited (NICOL)	6.6%
5. Exim Bank Tanzania	4.6%

6. AunaliF.Rajabali	1.7%
7. SajjadF.Rajabali	1.6%
8. Standard Bank Plc	1.3%
9. Parastatal Pension Fund (PPF)	0.8%
10. National Social Security Fund (NSSF)	0.7%
11. TCCIA Investment Company Limited	0.5%

BODs

There are nine members in the NMB Board of Directors.

CRDB

CRDB Bank Plc is a leading, wholly-owned private commercial bank in Tanzania. The Bank was established in 1996 and has grown and prospered over the years to become the most innovative, first choice, and trusted bank in the country. CRDB Bank has been recording progressive profit every year since its foundation and has paid dividends annually. The Bank reached an important milestone recently and was listed on the Dar es Salaam Stock Exchange on 17th of June, 2009.

CRDB Bank offers a comprehensive range of Corporate, Retail, Business, Treasury, Premier, and wholesale microfinance services through a network of over 85 branches, 250 ATMs, 15 Depository ATMs, 12 Mobile branches, 900 Point of Sales (POS) terminals and scores of Microfinance partners institutions. The Bank also operates through Internet and Mobile banking services.

Mission

CRDB Bank is committed to provide quality and competitive financial services with a strong focus on retail banking and customized corporate and institutional services, while ensuring the confidence and trust from our stakeholders

Vision

CRDB Bank is to be the leading bank, which is customer need driven with competitive returns to shareholders.

Shareholding Structure	
1. DANIDA Investment Fund	21.5%
2. Parastatal Pension Fund	10%
3. SCB (T) Nominee Ltd SCB (M) Re Pictet and CIE A/C	6.1%
4. Public Service Pension Fund	3.3%
5. SCB (T) Nominee Ltd SCB (Mauritius) GHANA	3.1%
6. The Local Authorities Pension Fund	2%
7. SCB (T) Nominee Ltd SCB(M) Re Altree Custody Serv	2.4%
8. Western Zone Tobacco Growers Cooperative	1.7%
9. Union Ltd	1.6%
10. CMG Investment Ltd	1.3%
11. Hans Macha	1%
12. Lindi Development Fund	
13. Shareholders Owning Shares Below 1%	46%
Grand Total	100%

BODs

The Board consists of ten (10) Directors (including the Chairman). The directors are all Tanzanian with the exception of one, who is Danish.

2.2 Empirical Literature Review

In this part of the study substantive findings by other researchers who have done similar studies in terms of the conclusions they derived and methods they used in drawing their conclusions are presented.

Pastory and Qin (2012) revealed results from their regression model indicate that capital adequacy, liquidity and asset quality are more crucial in profitability of commercial banks, in absence of them the commercial banks will always incur losses.

Naceur (2003) using a sample of ten Tunisian banks from 1980 to 2000 and a panel linear regression model, reported a strong positive impact of capitalization to ROA. Sufian (2009), studied the determinant of commercial banks profitability, the paper indicated that both the internal determinant and external determinant are crucial in the

profitability of commercial banks. Nazir (2010), analyzed the financial performance in India, his study indicated that capital adequacy, liquidity, asset quality and management are crucial in influencing the financial performance of the commercial banks. Naceur (2003) investigated the determinant of commercial banks in Tunisia; the study revealed that the financial structure, banks characteristics and macroeconomic variables have potentials effect on the profitability of the commercial banks. Molyneux and Thornton (1992) investigated the profitability of 18 European countries; their findings revealed that interest rates, government policy and bank regulation has potential impact on profitability of the commercial banks, also Demerguc-kunt and Huizigha (1999) in their study on determinant of commercial banks profitability revealed the same story. However other studies such as miller and Noulas (1996) indicated that the profitability of commercial banks is being determined by the efficiency of the commercial banks itself. Staikous and Steliaros (1999) showed that the profitability of commercial banks has been influenced by the inflation rate, proprietary regime and core capital. Furthermore Khrawish (2011) investigated the determinant of commercial banks in Jordan, bank size and total liabilities to total asset are found to have negative impact on the profitability while GDP and inflation are found to have a negative impact on the financial performance of commercial banks.

In principle a bank's capacity to absorb unforeseen losses determines its level of risk (Goddard *et al.*, 2004). Several ratios are commonly used to proxy for risk, including the CAR and the liquidity ratio. In theory an excessively high CAR could signify that a bank is operating over-cautiously and ignoring potentially profitable investment opportunities. A bank holding a relatively high proportion of liquid assets is unlikely to earn high profits, but is also less exposed to risk; therefore shareholders should be willing to accept a lower return on equity (Goddard *et al.*, 2004).

The trend of commercial banking is changing rapidly. Competition is getting stiffer and, therefore, banks need to enhance their competitiveness and efficiency by improving performance. Normally, the financial performance of commercial banks and other financial institutions has been measured using a combination of financial ratios analysis, benchmarking, measuring performance against budget or a mix of these methodologies (Avkiran, 1995). Gopinathan (2009) has presented that the financial

ratios analysis can spot better investment options for investors as the ratio analysis measures various aspects of the performance and analyzes fundamentals of a company or an institution.

Furthermore, Ho and Zhu (2004) have reported that the evaluation of a company's performance has been focusing the operational effectiveness and efficiency, which might influence the company's survival directly. The empirical results of the researches (Raza *et al.*, 2011; Tarawneh, 2006) explained that a company, which has better efficiency, it does not mean that always it will show the better effectiveness. Alam *et al.* (2011) study concludes that ranking of banks differ as the financial ratio changes. Bakar and Tahir (2009) in their paper used multiple linear regression technique and simulated neural network techniques for predicting bank performance. ROA was used as dependent variable of bank performance and seven variables including liquidity, credit risk, cost to income ratio, size and concentration ratio, were used as independent variables. They concluded that neural network method outperforms the multiple linear regression method however it need clarification on the factor used and they noted that multiple linear regressions, not-withstanding its limitations, can be used as a simple tool to study the linear relationship between the dependent variable and independent variables. There are number of studies, which examine the bank performance using CAMEL framework, which is the latest model of financial analysis. Emre (2012) in a study on Determinants of bank profitability, identified the ratio of loan loss provision to gross loans, total costs to total income both have a significant and negative relationship with ROA. Elyor (2009) and Uzhegova (2010) have used CAMEL model to examine factors affecting bank profitability with success. The CAMEL Framework is the most widely used model (Baral, 2005).

Javaid *et al.* (2011) analyzed the determinants of top 10 banks' profitability in Pakistan over the period 2004 to 2008. They focused on the internal factors only. Javaid *et al.* (2011) used the pooled ordinary least square (POLS) method to investigate the impact of assets, loans, equity, and deposits on one of the major profitability indicator of banks which is return on asset (ROA). The empirical results found strong evidence that these variables have a strong influence on profitability. How-ever, the results show that higher total assets may not necessarily lead to higher profits due to diseconomies of

scales. Also, higher loans contribute towards profitability but their impact is not significant. Equity and deposits have significant impact on profitability. The performance of commercial banks can be affected by internal and external factors (Al-Tamimi, 2010; Aburime, 2005). According to Aburime (2008), the profitability of a bank depends on its ability to predict, evade and monitor risks, possibly to cover losses brought about by risks that coms about. Although it is important for banks to be liquid to avoid a run on it, Kamau (2009) argues that when banks hold high liquidity, they do so at the opportunity cost of some investment, which could generate high returns. Again, Sufian and Chong (2008) draws a very strong relationship between firm performance and the management efficiency through management of expenses.

Studies done by Olufemi and Onaolapo (2012) on 'Effect of capital adequacy on profitability', reveal that CAR does not reflect much on performance indicators including ROA; Contrary to a study done on Determinants of capital adequacy ratio in Jordanian banks by Al-sabbagh (2004), which shows that there is a positive significant relationship between capital adequacy ratio and return on assets. Chan and Vong (2009) in a study on determinants of bank profitability reveal that a well-capitalized bank is perceived to be of lower risk and such an advantage will be translated into higher profitability.

In a study done in Malaysia by Aziz *et al.* (2008), on the Impact of NPL towards profitability performance, it was discovered that there is a significant impact of NPLs to profitability performance. Financing to purchase residential property turned out to be a leading contributor to non-performing loans. The study on Malaysian banks by Guru *et al.* (2001) also show that efficient management is among the most important factors that explain high bank profitability. There is also an extensive literature based on the idea that an expense-related variable should be included in a profit function. For example, Bourke (1989) and Molyneux and Thornton (1992) found a positive relationship between better-quality management and profitability. A study carried out by Kutsienyo (2011), reveals that the results for the ROA model indicate that capital adequacy, liquidity and bank size are positively significant to bank profitability while asset quality and operating expense are negatively significant to bank profitability. A study on the effects of interest margins on the profitability of commercial banks in

Kenya by Mutungi(2011), found that the relationship between net interest margin and return on assets was not significant given the non-significance of the F-statistic (F=4.550, p=0.123). The study also found that net interest margin had a negative effect on return on assets (-3.926). However, the impact was not significant at 5% level (p = 0.123).

Vong and Chan (2009) in their study revealed that although bank loans are the main source of revenues and are expected to affect profits positively, findings from various studies are not conclusive. While the study by Abreu and Mendes (2000) documents a positive relationship between the loan ratio and profitability, studies by Bashir and Hassan (2003) and Staikouras and Wood (2003) show that a higher loan ratio actually impacts profits negatively. The latter study notices that banks with more non-loan earnings assets are more profitable than those that rely heavily on loans.

Out of all the reviewed studies as presented in Table 2.4; only a few have used the complete CAMEL model in determining profitability. This necessitates the use of the popular model to arrive at the determinants of profitability in Tanzania.

Table 2.4: Summary of empirical review

S/N	Author(s) & Year	Title & place	Methodology	Determinants of Profitability
1.	Pastory and Qin (2012)	Commercial banks profitability position: The case of Tanzania	Financial ratios analysis and Regression analysis	Asset quality, capital adequacy and liquidity
2.	Nuceur (2003)	Determinants of the Tunisian banking industry profitability: Panel evidence	Multiple regressions analysis	Bank loans, capital and high overheads
3.	Emre (2012)	Determinants of bank profitability: An investigation of Turkish banking sector	Multiple regressions analysis	Ratio of loan loss provisions to gross loans; total costs to total income.
4.	Sufian and Habibullah (2009)	Bank specific and Macroeconomic determinants of bank profitability: Empirical evidence from the China banking sector	Multivariate regression analysis	Liquidity, credit risk, capitalization and economic growth
5.	Nazir (2010)	Analyzing financial performance of commercial banks in India: Application of CAMEL model	Financial ratio analysis	
6.	Molyneux and Thorton (1992)	Determinants of European bank profitability: A note	Multivariate regression analysis	Management quality
7.	Goddard, Molyneux and Wilson (2004)	The profitability of European banks: A cross-sectional and dynamic panel analysis	Multivariate regression analysis	Capital to asset ratio
8.	Mutungi (2011)	The effect of interest margins on profitability of commercial banks in Kenya	Descriptive statistics, graphs, multiple regression analysis and inferential statistics	
9.	Vong and Chan (2009)	Determinants of Bank Profitability in Macao		Capital strength and asset quality
10.	Javaid, Anwar, Zaman, Gafoor (2011)	Determinants of Bank Profitability in Pakistan: Internal factor analysis	Correlation and Multiple regression analysis	Equity and deposits
11.	Al-Sabbagh (2004)	Determinants of capital adequacy ratio in Jordanian banks	Correlation and regression analysis	Capital adequacy ratio
12.	Aziz et al (2008)	Impact of NPL towards profitability performance: Malaysia	Regression analysis	Non-performing loans
13.	Guru *et al.* (2001)	Determinants of commercial banks profitability in Malaysia	Regression analysis	Management quality
14.	Munyambonera (2012)	Determinants of commercial bank profitability in Sub-Saharan Africa	Multivariate regression analysis	Capital adequacy, Liquidity, operational efficiency
15.	Staikouras and Wood (2003)	Determinants of European bank profitability	Regression analysis	Loan ratio
16.	Kutusienyo (2011)			Capital adequacy, liquidity, bank size, asset quality and operating expenses.
17.	Olufemi and Onaolapo (2012)	Effect of capital adequacy on profitability of the Nigerian banking sector	OLS estimation	

Source: Authors own composition

2.3 Conceptual Framework

This chapter gives the approach that has been taken in conducting the research, given the theoretical and empirical review. Proponents claim that when purpose and framework are aligned, other aspects of empirical research such as methodological choices and statistical techniques become simpler to identify. The conceptual framework also expresses my expectations of the outcomes of the effect the independent variables will have on the dependent variable.

From each CAMEL component, one ratio is derived and based on that the banks were rated according to Table 2.2. The derived ratio will further be used to run a multiple regression that tests the hypotheses and gives the determinants of profitability.

The aim is to find out if the CAMEL components determine profitability of a commercial bank as shown in figure 2.1.

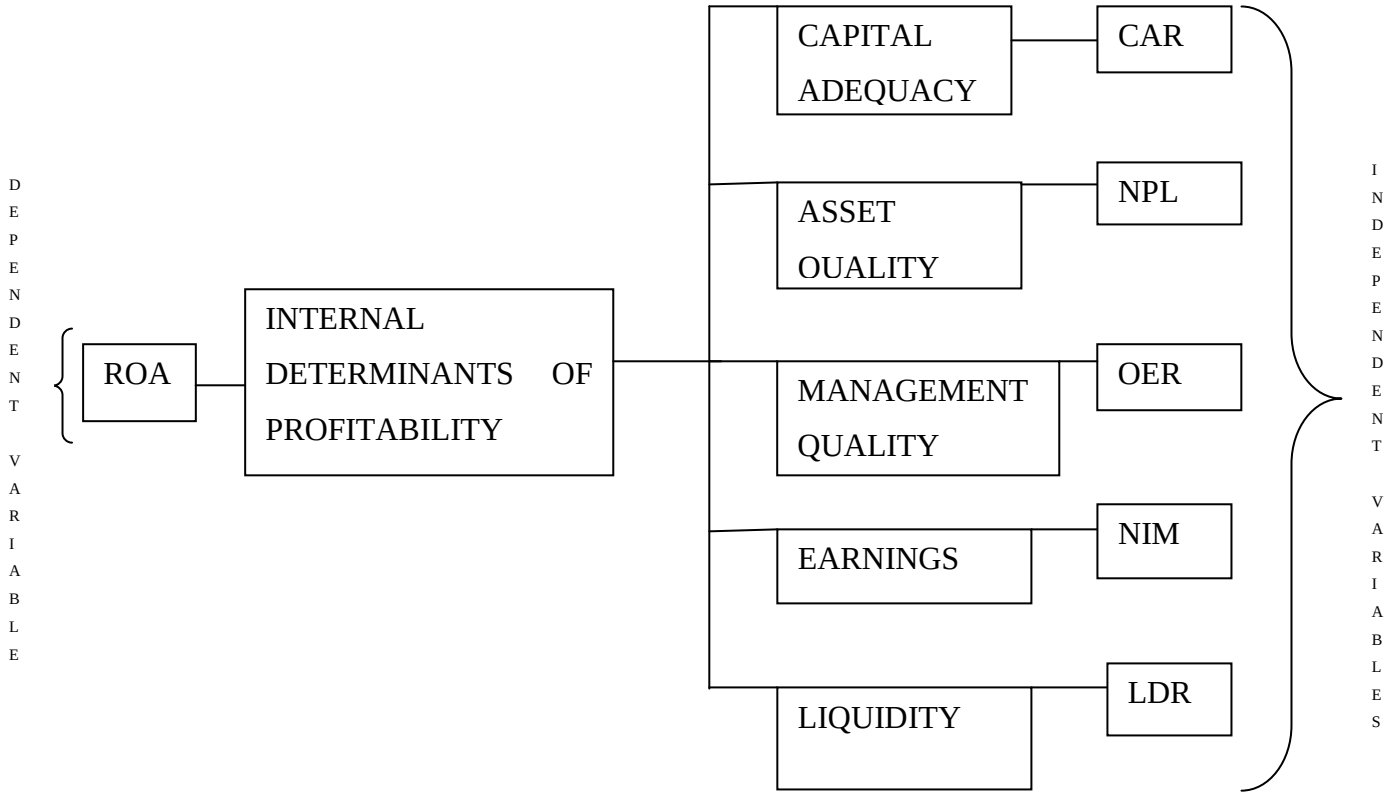

Figure 2.1: Internal determinants of commercial banks profitability using CAMEL framework

Source: Authors own composition

The Ratios

The ratios used were chosen based on the availability of data for the computation in the financial statements of the sample banks. Another reason is that they are widely used

ratios according to many studies that were reviewed and this can provide a basis for comparison. The ratios for each CAMEL component can be described as follows;

Return on assets (ROA)

A high ratio indicates that the business is earning more money and investing less on assets. It is an indicator of the asset intensity of a company. Manufacturing firms usually have lower return on assets as they require huge investments in assets compared to the service industries. A low ratio shows that the company is more asset-intensive. A high percentage indicates that the company is less asset-intensive. It also means that lesser investments are needed in assets to make profits. In the industry, as a general rule, return on assets ratio below 5% indicates that the company is asset heavy and above 20%indicates that the company is asset-light (Dogra, 2013).

ROA helps to determine a lot of factors as well as aids in taking certain decision related to business and investment including assessment of asset management, determination of investment decisions, profit indication and determination of shareholder's profit.

Capital Adequacy Ratio (CAR)

CAR is measure of a bank's capital. This ratio is used to protect depositors and promote the stability and efficiency of financial systems around the world. Two types of capital are measured: tier one capital, which can absorb losses without a bank being required to cease trading, and tier two capital, which can absorb losses in the event of a winding-up and so provides a lesser degree of protection to depositors.

Capital adequacy ratio is the ratio which determines the bank's capacity to meet the time liabilities and other risks such as credit risk, operational risk etc. In the more simple formulation, a bank's capital is the "cushion" for potential losses, and protects the bank's depositors and other lenders. Banking regulators in most countries define and monitor CAR to protect depositors, thereby maintaining confidence in the banking system (Wikipedia, 2013).The regulatory CAR for Tier 1 capital is 10% and for tier 1 and tier 2 capital combined is 12% according to BOT standards.

Non-performing loans ratio (NPL)

NPL is a sum of borrowed money upon which the debtor has not made his or her scheduled payments for at least 90 days. A nonperforming loan is either in default or close to being in default. Once a loan is nonperforming, the odds that it will be repaid in full are considered to be substantially lower. If the debtor starts making payments again on a nonperforming loan, it becomes a re-performing loan, even if the debtor has not caught up on all the missed payments.

Operating Expense Ratio (OER)

The financial ratio known as the operating expense ratio, or OER, is considered a measurement of management efficiency. Using information found on the income statement, this metric looks at the ratio of operating expenses to net sales. While management can take certain actions to control expenses, the price of a product or service is typically a function of market demand. The operating expense ratio allows investors and analysts to understand how efficiently a business is able to produce goods or supply services.

When viewed over time, the operating expense ratio can also reveal if management is able to expand operations without dramatically increasing expenses. If revenues were to expand year-over-year and the OER goes down; this would indicate that management is able to scale production efficiently; revenues expanded more quickly than expenses increased. This is a very positive outcome from a profitability standpoint.

NIM (Net interest margin ratio)

Net interest margin is the ratio of net interest income to invested assets. Banks are keenly interested in their net interest margins because they lend at one rate and pay depositors at another. However, comparisons between net interest margins of different banks are not always useful because the nature of each bank's lending and deposit activities varies. Net interest margin is a measure of an investing strategy's success, especially when investors are attempting to "arbitrage" the market by borrowing at a rate that they believe is below what their potential returns will be (Investing Answers, 2013).

The net interest margin (NIM) measures how large the spread between interest revenues and interest costs that management has been able to achieve by close control over earning assets and the pursuit of the cheapest sources of funding (Rose *et al.*, 2006).

LDR (Loans to deposits ratio)

Is a ratio between the banks total loans and total deposits. If the ratio is lower than 1, the bank did not borrow the money first from another bank in order to then loan it further to its customers, but did only use its own deposits. If, on the other hand, the ratio is greater than 1, the bank did not use only its deposits, but it first borrowed additional money from another bank and loaned it to its customers at higher rates. Banks may not be earning as much as they could be, if the ratio is too low; on the other hand, if the ratio is too high, it means that banks might not have enough liquidity to cover any unforeseen fund requirements or in case of crisis. It is a commonly used statistic for assessing a bank's liquidity.

Based on reading different theories on profitability and CAMEL, expectations of how the independent variables will affect the dependent variable are predicted. Table 2.5 summarizes these expectations. Overall the conceptual framework of this study can be summarized by Fig. 2.1 and Table 2.5.

The expectations of how the independent variables impact the dependent variable where predicted on the following basis;

ROA in this context is a reflection of the net profit of a bank. The expectations are based on empirical and theoretical findings. The expected impact of the independent variables can further be explained as follows.

Table 2.5: The expected impact of independent variables on ROA (Return on assets)

CAMEL COMPONENT	RATIO	SYMBOL	FORMULA	PREDICTED IMPACT ON ROA= Net Income/ Total assets
Capital Adequacy	Capital Adequacy Ratio	CAR	CAR = Tier I + Tier II/Risk weighted Assets	+ve
Asset Quality	Non-performing loans Ratio	NPL	NPL= Nonperforming assets/ Total loans and advances	-ve
Management Quality	Operating Expenses Ratio	OER	OER= Total operating expense/ Total operating revenue	-ve
Earnings Performance	Net Interest Margin	NIM	NIM= (Interest received- Interest paid)/ Average earning assets	+ve
Liquidity Management	Loan to Deposit Ratio	LDR	LDR= Total loan and advances/ Total deposit	-ve or + ve

Source: Authors own composition

In the case of the CAR, which represents the capital base, it is expected that it will move in the same direction as the net profit i.e. the stronger the capital base the more profitable an institution is. According to Onaolapo and Olufemi (2012) it is discussed that the ultimate strength of a bank lies in its capital funds given its significance as a tool for meeting liabilities in times of financial crisis and as a cushion of insulating a bank in times of varying market adversities and is a tool for operating profitably. They say that every business exerts some influence on its environment, customers, general public and government and this is derived from its financial resources and profitability which is a function of availability of funds to prosecute identified investment.

According to the 2001 annual report of Japan, it is said that the first mechanism by which the problem of non-performing loans drags on the economy is that banks' intermediary function declines as non-performing loans erode banks' profitability.

NPL which represents non-performing loans; the quality of assets, is expected to move in the opposite direction with net profit. The higher the non-performing loans the less profitable the bank is supposed to be, because there is a loss in collection of interest income derived from the non-performing loans which is the most depended on source of revenue to the bank.

Operating expenses ratio reflects on the ability of the management to control costs. The operating costs in the income statement appear under expenses and are deducted from the gross profit to arrive at the net profit. The higher the expenses the less the net profit is. That is why I expect the net profit to move in a negative direction with the OER. A study done by Vong and Chan stated that as conventional wisdom suggests, the higher the expense of a bank, the lesser the bank's profitability will be. Such a negative relation between expenses and profitability has been supported by studies of Bourke (1989) and Jiang *et al.*(2003), implying that profitable banks are able to operate at lower cost. On the contrary, Molyneaux and Thornton (1992) find that the expense variable affects European banking profitability positively. They propose that high profits earned by firms in a regulated industry may be appropriate in the form of higher salary and wage expenditures. Their findings support the efficiency wage theory, which states that the productivity of employees increases with the wage rate. This positive relationship between profitability and expenses is also observed in Tunisia (Naceur 2003) and Malaysia (Guru *et al.* 2002). The proponents argue that these banks are able to pass their overheads to depositors and borrowers in terms of lower deposit rates and/or larger lending assets.

It is expected that as net interest income which is revenue increases the net profit will also increase, given the layout of the income statement. The effect of liquidity was a bit tricky to predict. Increasing the number of loans means increasing the interest income given insignificant number of non-performing loans and hence increasing the net profit of the bank. But when there is a significant number of non-performing loans there is less interest income and more expenses on recovery of the loans which eventually leads to deteriorating net profit. Studies e.g., by Sacerdoti (2005), show that spreads are too high and one reason being large share of NPLs in Africa. If this also applies to Tanzania that means a high loan portfolio will lead to deteriorating net profit. Another

way that net profit can be eroded is the high performing loans will lead to the failure of commercial banks to meet their financial obligations, which may lead to the loss of customers and investors and this means a loss of non-interest income as well and therefore reduced profits.

2.4 Hypothesis

Based on the objectives of the study, the hypotheses are;

H1: There is no significant relationship between capital adequacy ratios and profitability of the banks

H2: There is no significant relationship between asset quality ratios and profitability of the banks

H3: There is no significant relationship between management quality ratios and profitability of the banks

H4: There is no significant relationship between earnings ratios and profitability of the banks

H5: There is no significant relationship between liquidity ratios and profitability of the banks

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

The purpose of this study is to analyze the factors determining the profitability of Tanzania commercial banks. The ratios based on the CAMEL framework of three commercial banks; CRDB, NMB, NBC, were derived, compared, rated and used to run a multiple regression to determine which ratios affect the profitability. The study has a descriptive financial analysis to describe, measure, compare and classify the performance of commercial banks.

3.2 Scope of Study

For the purpose of this study, annual audited financial statements published by the respective commercial banks for the period of seven years, January 2006 to December 2012 were used.

3.3 Study Population and Sample

The study population is the existing 32 commercial banks which are in operation in Tanzania. To make a sample for my research criteria sampling method was selected. Due to working on the CAMELS rating system, it is necessary to work upon bank's annual financial reports. My criteria for the banks to be included as a sample are the availability of their audited consolidated annual financial reports.

For the purpose of this study 3 banks; CRDB, NBC and NMB were selected, I have decided to opt for the three banks because of their consistent and full disclosure of the financial statements throughout the period of study.

Other reasons for choosing these banks are that they are the three largest banks in terms of network according to DBS report of 2010, so their services and products cover a large part of Tanzania, and my study is a case of Tanzania.

Table 3.1: Statistics of the Sample Banks

Name of Bank	Branch network	Total Assets (Millions)	Total Deposits (Millions)
CRDB	58	2,305,226	2,009,073
NBC	56	1,471,220	1,225,175
NMB	139	2,107,079	1,820,137

Source: DBS REORT 2010, APPENDIX VI

According to the DBS report of 2009, as at 31st December 2009, the three largest banks had 48% of the sector's total assets, 49% of the sector's total gross loans, 50% of the sector's deposits and 44% of the banking sector's total capital. The three banks referred to here are CRDB, NBC and NMB and it is evident they hold a significant part of the market share which was by then out of 27 commercial banks. The study also chooses a sample of 7 years from 2006 to 2013, based on judgment and this is due to the consistency and availability of information for all three banks and also that this is the most current information available hence bearing results that are up to date.

3.4 Data Type and Collection Methods

The data that was used is historical data disclosed by annual reports of the sample commercial banks. Methods of collection include browsing the internet and reading published sources of annual reports.

3.5 Data Analysis

The analysis of this study is based on CAMEL framework as described in the theoretical literature to include capital adequacy, asset quality, management quality, earnings, and liquidity management. The ratios were analyzed by correlation and multiple regressions to obtain the determinants of profitability. The software used is STATA.

The analysis concepts, tests of reliability and basis of interpretation are explained in detail as follows:

Correlation

Pearson's correlation coefficient, normally denoted as r, is a statistical value that measures the linear relationship between two variables. It ranges in value from +1 to -1, indicating a perfect positive and negative linear relationship respectively between two variables. The calculation of the correlation coefficient is normally performed by statistical programs, such SPSS and SAS, to provide the most accurate possible values for reporting in scientific studies. The interpretation and use of Pearson's correlation coefficient varies based on the context and purpose of the respective study in which it is calculated. Report a correlation value close to 0 as indication that there is no linear relationship between the two variables. As the correlation coefficient approaches 0, the values become less correlated which identifies variables that may not be related to one another. Report a correlation value close to 1 as indication that there is a positive, linear relationship between the two variables. A value greater than zero that approaches one; results in greater positive correlation between the data. As one variable increases a certain amount; the other variable increases in a corresponding amount. The interpretation must be determined based on the context of the study. Report a correlation value close to -1 as indication that there is a negative, linear relationship between the two variables. As the coefficient approaches -1, the variables become more negatively correlated indicating that as one variable increases, the other variable decreases by a corresponding amount. The interpretation again must be determined based of the context of the study (Perdue, 2013).

Regression

Multiple regressions are based on a set of assumptions that have to be met before running the regression analysis and some tests have been done before interpretation of the result is made. This is required to ensure that the results are what they appear to be. The assumptions underlying the multiple regressions are: normality, referring to the shape of the data distribution; homoscedasticity, which requires that dependent variables exhibit equal levels of variance across the range of explanatory variables; linearity association between variables; and absence of correlated errors.

There are four principal assumptions which justify the use of linear regression models for purposes of prediction:

(i) linearity of the relationship between dependent and independent variables

(ii) independence of the errors (no serial correlation)

(iii) homoscedasticity (constant variance) of the errors

(a) versus time

(b) versus the predictions (or versus any independent variable)

(iv) normality of the error distribution.

If any of these assumptions is violated (i.e., if there is nonlinearity, serial correlation, heteroscedasticity, and/or non-normality), then the forecasts, confidence intervals, and economic insights yielded by a regression model may be (at best) inefficient or (at worst) seriously biased or misleading (Wooldridge, 2013).

Normality

Many researchers believe that multiple regressions require normality. This is not the case. Normality of residuals is only required for valid hypothesis testing, that is, the normality assumption assures that the p-values for the t-tests and F-test will be valid. Normality is not required in order to obtain unbiased estimates of the regression coefficients. OLS regression merely requires that the residuals (errors) be identically and independently distributed. Furthermore, there is no assumption or requirement that the predictor variables be normally distributed. If this were the case, than we would not be able to use dummy coded variables in our models (Wooldridge, 2013).

Homoscedasticity

One of the main assumptions for the ordinary least squares regression is the homogeneity of variance of the residuals. If the model is well-fitted, there should be no pattern to the residuals plotted against the fitted values. If the variance of the residuals is non-constant then the residual variance is said to be "heteroscedastic."

The first test on heteroskedasticity given by imest is the White's test and the second one given by hottest is the Breusch-Pagan test. Both test the null hypothesis that the variance of the residuals is homogenous. Therefore, if the p-value is very small, we would have to reject the hypothesis and accept the alternative hypothesis that the variance is not homogenous (Wooldridge, 2013).

Multicollinearity

When there is a perfect linear relationship among the predictors, the estimates for a regression model cannot be uniquely computed. The term collinearity implies that two variables are near perfect linear combinations of one another. When more than two variables are involved it is often called multicollinearity, although the two terms are often used interchangeably.

The primary concern is that as the degree of multicollinearity increases, the regression model estimates of the coefficients become unstable and the standard errors for the coefficients can get wildly inflated. In this section, we will explore some Stata commands that help to detect multicollinearity.

We can use the vif command after the regression to check for multicollinearity. vif stands for variance inflation factor. As a rule of thumb, a variable whose VIF values are greater than 10 may merit further investigation (Wooldridge, 2013).

Autocolleration

In statistics, the Durbin–Watson statistic is a test statistic used to detect the presence of autocorrelation (a relationship between values separated from each other by a given time lag) in the residuals (prediction errors) from a regression analysis. Durbin-Watson (DW) statistics is the ratio of sum of squares of successive differences of residuals to the sum of squares of errors. As a rule of thumb, if the DW statistic is less than 2, there is evidence of positive serial correlation (Büyüksalvarcı and Abdioğlu, 2011).

Tests of reliability

Coefficient of determination (R-squared)

In statistics, the coefficient of determination denoted R^2 and pronounced R squared, indicates how well data points fit a line or curve. It is a statistic used in the context of statistical models whose main purpose is either the prediction of future outcomes or the testing of hypotheses, on the basis of other related information. It provides a measure of how well observed outcomes are replicated by the model, as the proportion of total variation of outcomes explained by the model. A caution that applies to R^2, as to other statistical descriptions of correlation and association is that "correlation does not imply

causation." In other words, while correlations may provide valuable clues regarding causal relationships among variables, a high correlation between two variables does not represent adequate evidence that changing one variable has resulted, or may result, from changes of other variables.

A measure used in statistical model analysis to assess how well a model explains and predicts future outcomes. It is indicative of the level of explained variability in the model. The coefficient, also commonly known as R-square, is used as a guideline to measure the accuracy of the model. One use of the coefficient of determination is to test the goodness of fit of the model. It is expressed as a value between zero and one. A value of one indicates a perfect fit, and therefore, a very reliable model for future forecasts. A value of zero, on the other hand, would indicate that the model fails to accurately model the dataset.

Adjusted R-squared

The use of an adjusted R^2 (often written as $\bar{R}^2$ and pronounced "R bar squared") is an attempt to take account of the phenomenon of the R^2 automatically and spuriously increasing when extra explanatory variables are added to the model. It is a modification due to Thiele of R^2 that adjusts for the number of explanatory terms in a model relative to the number of data points. The adjusted R^2 can be negative, and its value will always be less than or equal to that of R^2. Unlike R^2, the adjusted R^2 increases when a new explanator is included only if the new explanator improves the R^2 more than would be expected in the absence of any explanatory value being added by the new explanator. If a set of explanatory variables with a predetermined hierarchy of importance are introduced into a regression one at a time, with the adjusted R^2 computed each time, the level at which adjusted R^2 reaches a maximum, and decreases afterward, would be the regression with the ideal combination of having the best fit without excess/unnecessary terms.

The adjusted R squared is different than the Coefficient of Determination, because the Coefficient of Determination will increase are more independent variables are added to the regression. This may occur whether or not the independent variables add to the explanatory power of that regression. The Adjusted R Squared will only increase if the

independent variables that are added to the regression help the overall explanatory power of the regression (Wooldridge, 2013).

Statistical Significance Testing

In statistical significance testing the p-value is the probability of obtaining a test statistic at least as extreme as the one that was actually observed, assuming that the null hypothesis is true. One often "rejects the null hypothesis" when the p-value is less than the predetermined significance level which is often 0.05 or 0.01, indicating that the observed result would be highly unlikely under the null hypothesis. Many common statistical tests, such as chi-squared tests or Student's t-test, produce test statistics which can be interpreted using p-values.

The p-value is a key concept in the approach of Ronald Fisher, where he uses it to measure the weight of the data against a specified hypothesis, and as a guideline to ignore data that does not reach a specified significance level (Wooldridge, 2013).

3.6 Model Specification

The study used an econometric multivariate model to analyze the determinants of profitability.

The model will be as follows;

$ROAt = \beta_0+\beta_1 Xt_1 + \beta_2 Xt_2 + \beta_3 Xt_3 + \beta_4 Xt_4 + \beta_5 Xt_5 + \varepsilon$

Where;

ROA- Return on Assets

X1- CAR (Tier 1 Capital + Tier 2 Capital / risk weighted Assets),

X2- NPL (non-performing loans/total loans),

X3- OER– Operating expenses/ Total revenue

X4- NIM – Net interest margin,

X5-LDR - Loan and Advances to deposit ratio.

In the equation, β_0 is constant and β is coefficient of variables while ε is the residual error of the regression.

All estimations will be performed in the STATA software program whereas the ordinary calculations in Excel.

The dependent variable: Return on Assets (ROA)
The independent variables:
Capital adequacy ratio (CAR)
Non-performing loans ratio (NPL)
Operating expenses ratio (OER)
Net interest margin (NIM)
Loan to deposit ratio (LDR)

CHAPTER FOUR
FINDINGS AND DISCUSSION

4.1 Introduction

In this section of the dissertation, empirical findings which are based upon financial tools such as ratios derived from the annual consolidated financial statements of the sample banks; CRDB, NBC, NMB; for the year from the year 2006 to 2012 are presented. Descriptive results are first presented and discussed. Then a total of six (6) financial ratios for all 3 banks of my sample were calculated; five that represent the five components of CAMEL and a sixth that represents profitability. Tables of each component of CAMEL and profitability and their respective ratings are also presented which gives a foundation for financial performance comparison. The banks are then ranked based on their respective ratios and ratings. This chapter further presents correlation analysis and findings based on the multiple regressions which give the determinants of profitability. The chapter is presented in the order of first the descriptive results, followed by the CAMEL ratios and their rating and finally the correlation and regression analysis. Discussions are presented hand in hand with their respective findings. Analysis and conclusion chapter of this study will be based upon these findings.

4.2 Descriptive Results

Summary statistics for variables used in this study are provided in Table 4.1. The dependent variable is return on assets (ROA) a measure of profitability and the independent variables are also indicated.

Table 4.1: Descriptive statistics of variables

Variable	Obs	Mean (%)	Std. Dev. (%)	Min(%)	Max(%)
Roa	21	2.965714	1.237257	.16	4.5
Car	21	16.63762	7.638438	10	46.4
Npl	21	6.595714	4.099093	1.59	17.8
Oer	21	51.63143	8.658281	42.87	73.8
Nim	21	9.985238	2.021892	4.36	13.67
Ldr	21	55.43143	11.75312	19.91	73.7

Source: Worked out from STATA software, 2013

Return on assets (ROA) ranges from a high of 4.5% to a minimum of 0.16%. ROA has a 42% deviation from the mean as depicted by the standard deviation. Capital adequacy

ratio (CAR) ranges from a high value of 46.4% to a minimum of 10% with a variation of 46% about the mean of 16.6%. Non-performing loans ratio (NPL) ranges from a very high value of 17.8% to a low of 1.59%. The variability for this ratio is 62% about the mean of 6.6%.

Operating expenses ratio (OER) ranges from a high value of 73.8% to a low value of 42.9%. There is a 17% uncertainty in NPL value. The mean NPL is 51.6%. Net interest margin (NIM) reaches a high value of 13.67% to a low value of 4.36%. The deviation about the mean of 10%; is 20%. Loan to deposit ratio (LDR); ranges from a high value of 73.7% to a low value of 19.91%. The mean is 55.43% and there is a 21% variability of the LDR. Non-performing loans ratio shows the highest variability compared to the other ratios.

4.3 Profitability

In this study the position of profitability has been measured with the help of ROA. Table 4.2 is the tabular presentation of the ROA of the sample commercial banks and their respective ratings as per Table 2.2. ROA is a comprehensive measure of the overall bank performance from an accounting perspective (Sinkey and Joseph, 1992). It is obvious that commercial financial institutions are undertaking their business activities and accept risk for the purpose of attaining positive returns.

Table 4.2: Comparative ROA analysis and rating

Year	CRDB (%)	Rating	NBC (%)	Rating	NMB (%)	Rating
2006	3.13	1	3.26	1	4.4	1
2007	3.27	1	3.7	1	4.11	1
2008	4.5	1	3.7	1	3.71	1
2009	1	1	3.3	1	3.01	1
2010	3	1	0.16	5	3.85	1
2011	2	1	0.77	3	3.31	1
2012	4	1	2.1	1	3	1
Average	2.98	1	2.42	1	3.62	1

Source: Worked out from field data extracted from annual reports of sampled banks, 2012

The ROAs of all sample banks have been positive during the selected period of study, the performance of the banking system in Tanzania is reasonable in terms of net profit. Most ROA values are higher than the mean which is 2.9%. The sample banks have

experienced no problem of covering operation costs which include financial and non-financial expenses with internally generated income over the period of study. NMB had the highest average ROA over the seven (7) year period followed by CRDB and then NBC. This implies that NMB has had better asset management strategies and investors would thus be more willing to invest in NMB given the ROAs. The highest ROA of 4.5% was experienced by CRDB in 2008 and the lowest by NBC in 2010 of 0.16%. All the ROAs are below 5% indicating that the banking system is an asset heavy industry. All of the banks have an average rating of 1 which signifies a strong position of ROA according to the rating base given in table 2.1. Throughout the study period the banks experienced a strong ROA position except for NBC in the year 2010 and 2011 where the ROA was 0.16% and 0.77% respectively. The positive returns may indicate an efficiency of management of the sample banks. Constantly profit-making banks add equity to the total capital fund, reduce risk of insolvency and finally increase the wealth of their shareholders.

4.4 Capital Adequacy

The position of capital adequacy has been measured by CAR. Table 4.3 is the tabular presentation of the CAR of the sample commercial banks and their respective ratings as per Table 2.2.

Table 4.3: Comparative CAR analysis and rating

Year	CRDB (%)	Rating	NBC (%)	Rating	NMB (%)	Rating
2006	14	2	16.7	1	46.4	1
2007	19	1	18.31	1	29.7	1
2008	17	1	16.8	1	28	1
2009	21	1	16.24	1	24	1
2010	18	1	11.96	3	23	1
2011	15	1	12.6	2	22	1
2012	16	1	10	3	21	1
Average	17.14286	1	14.65857	2	27.72857	1

Source: Worked out from field data extracted from annual reports of sampled banks, 2012

Banks under study are well capitalized and they are complying with the directive of BOT on the capital adequacy ratio which requires a minimum of 12% total capital to risk weighted capital. This means the banks should be able absorb to potential shocks

that may occur. For this reason the Tanzanian banking system continued to perform well even though the globe was hit by a financial crisis. NMB has maintained the highest CAR over the period of study followed by CRDB and the NBC.

The banks have all scored a rating of "1" as per table 2.1 throughout the whole period of study which means a strong capital adequacy position with one exception of CRDB which scored a rating of "2" in the year 2006. The overall performance of the sample banks shows a good capital sufficiency.

4.5 Asset Quality

Asset quality has been measured by NPL. Table 4.4 is the tabular presentation of the NPL of the sample commercial banks and their respective ratings as per Table 2.2.

Table 4.4: Comparative NPL analysis and rating

Year	CRDB (%)	Rating	NBC (%)	Rating	NMB (%)	Rating
2006	3	3	5.1	4	6	5
2007	6.07	5	4	4	4.4	4
2008	4.5	4	4.3	4	5.54	4
2009	6	5	7.1	5	3.75	4
2010	11	5	17.8	5	3.69	4
2011	11	5	9.48	5	1.59	2
2012	7	5	14.7	5	2.4	2
Average	6.938571	5	8.925714	5	3.91	4

Source: Worked out from field data extracted from annual reports of sampled banks, 2012

Management of the banks are usually concerned with the quality of their assets as they constitute most part of the bank's cost and play an important role in the profitability of a bank. 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). The observation from Table 4.4 is that NMB has the lowest average NPL over the study period followed by CRDB and then NBC. The overall peak of NPL ratio given the data was experienced by NBC in 2010 which is the same year that CRDB hit its peak NPL ratio. During 2010, the ratio of NPLs edged upwards, mainly because of the limited debt service by businesses whose profitability was impacted by the GFC, the Financial Stability Report of 2011 notes. The sample banks experience poor asset quality ratings

implying poor quality of assets. This means the profitability of the banks do not reach their potential.

4.6 Management Quality

The position of management quality has been measured by OER. Table 4.5 is the tabular presentation of the OER of the sample commercial banks and their respective ratings as per Table 2.2.

Table 4.5: Comparative OER analysis and rating

Year	CRDB (%)	Rating	NBC (%)	Rating	NMB (%)	Rating
2006	47.04	5	42.87	4	52.58	5
2007	43.42	4	43.85	4	51.53	5
2008	45.6	4	50.32	5	46.75	5
2009	46	5	45.2	4	51.45	5
2010	48	5	57.4	5	57.13	5
2011	46	5	72.11	5	55.55	5
2012	47	5	73.8	5	60.66	5
Average	46.15143	5	55.07857	5	53.66429	5

Source: Worked out from field data extracted from annual reports of sampled banks, 2012

Sound performance of management is difficult to measure. It is primarily a qualitative factor applicable to individual institutions. The banks all scored an average rating of "5" which implies management performance concerns. CRDB has the least average OER followed by NMB and then NBC. These bad ratings imply inefficiency of methodology used by loan officers or managers.

4.7 Earnings Performance

The position of earning quality has been measured by NIM. Table 4.6 is the tabular presentation of the NIM of the sample commercial banks and their respective ratings as per Table 2.2.

Table 4.6: Comparative NIM analysis and rating

Year	CRDB (%)	Rating	NBC (%)	Rating	NMB (%)	Rating
2006	9.36	1	8.6	1	9.6	1
2007	10.09	1	9.4	1	13.67	1
2008	10.3	1	8.75	1	11.78	1
2009	10	1	8.88	1	10.69	1
2010	9	1	9.99	1	12.6	1
2011	9	1	8.15	1	12.43	1
2012	10	1	9.4	1	13	1
Average	9.678571	1	9.024286	1	11.96714	1

Source: Worked out from field data extracted from annual reports of sampled banks,2012

Although theory states it is difficult to compare NIM due to different lending rates and borrowing rates, the findings at least prove to be positive for all banks throughout the study period. Despite the GFC the Tanzanian banks maintained a NIM in the year 2010.

All the sample banks have maintained a positive average NIM with a rating of "1" which shows a strong earning position. A strong NIM implies good lending operations and also good investing choices resulting into financial productivity from the credit services and investment activities.

4.8 Liquidity Position

Liquidity position has been measured by LDR. Table 4.7 is the tabular presentation of the LDR of the sample commercial banks and their respective ratings as per table 2.2.

Table 4.7: Comparative LDR analysis and rating

Year	CRDB (%)	Rating	NBC (%)	Rating	NMB (%)	Rating
2006	51.55	1	52.55	1	19.91	1
2007	59.08	2	58.84	2	34.66	1
2008	66.5	3	73.7	4	48.56	1
2009	61	2	64.55	3	47.22	1
2010	57	2	58.33	2	48.06	1
2011	63	3	53.23	1	63.12	3
2012	67	3	57.2	2	59	2
Average	60.73286	2	59.77143	2	45.79	1

Source: Worked out from field data extracted from annual reports of sampled banks, 2012

The LDR measures the ratio of funds that a bank has utilized in credit out of deposits collected. The higher the LDR the more effective the bank utilizes the fund it has collected. Both liquidity deficit and liquidity surplus indicate a problem in the financial status of a bank. Much more liquidity surplus hurts the profitability of the commercial bank by reducing the return on assets. Similarly, liquid deficit also costs much to the commercial banks in term of the higher purchasing price of liquidity and hurt in the reputation of the banks. Therefore, commercial banks should strike the trade-off between the profitability and liquidity risk. NMB has the best average rating position of "1" followed by both CRDB and NBC which have a rating of "2". NBC in 2008 scored a rating of "4" with LDR of 73.7%, this rating implies that there should be concerns in case the depositors where to pull out their deposits at the same time hypothetically.

4.9 Ranking of the commercial banks

In table 4.8 all sample banks of this research are ranked on the basis of the total component score attained by every individual bank.

Table 4.8: Sample banks ranking

Bank	ROA	CAR	NPL	OER	NIM	LDR	Total Components Score	Ranking
CRDB	1	1	5	5	1	2	15	2
NBC	1	2	5	5	1	2	16	3
NMB	1	1	4	5	1	1	13	1

Source: Worked out from field data extracted from annual reports of sampled banks, 2012

The lower the score is, the better the ranking of the bank. It is important to note also that ranking of banks may change depending on the ratios used. NMB has performed relatively well and ranked number 1 followed by CRDB which is number two and then NBC which takes the 3rd position. NMB and NBC both have 30% government ownership whereas CRDB is wholly privately owned. NBC has majority foreign ownership (70%) and thus control; whereby 55% is taken by ABSA group of South Africa and 15% by a United Nations Organization called International Finance Organization, whereas CRDB has 21.5% foreign ownership by DANIDA of Denmark and NMB is approximately 50% foreign owned by Rabobank of Netherlands. CRDB and NMB are listed on DSE.

NBC ranking 3rd is likely due to its high rate of NPL and high operating expenses compared to the other two banks. NMB on the other hand has the lowest average LDR but has the highest average NIM; this could imply that it is giving fewer loans but charging higher interest than the other two banks but on the other hand it also has better quality assets since it has the lowest average NPL. NMB also leads in having the least average OER, meaning it has more revenue that contributes to profit than the other two banks, making it more profitable as depicted by its average ROA.

4.10 Correlation Analysis

The degree of relationship among the study variables depicted in the model were tested using descriptive measure of correlation between ROA and the determinants of the bank's profitability ratios, which is presented in Table 4.9.

Table 4.9: Correlation between ROA and other financial ratios

	Roa	Car	Npl	oer	Nim	ldr
Roa	1.0000					
Car	0.2749	1.0000				
Npl	-0.7083	-0.1325	1.0000			
Oer	-0.5167	-0.1808	0.3697	1.0000		
Nim	0.2354	-0.0903	-0.2244	0.1385	1.0000	
Ldr	-0.2105	-0.4449	0.0960	-0.1277	-0.1712	1.0000

Source: Worked out from STATA software, 2013

The results show that ROA is positively correlated with CAR (0.2749) and NIM (0.2354). This means the capital adequacy moves in the same direction as profitability which is represented by ROA. NIM represents the earnings of the bank, the higher the earnings of the commercial bank the higher the higher the profitability. Both the CAR and NIM have weak linear relationships with ROA.

On the other hand, ROA was negatively correlated with NPL (-0.7083), OER (-0.5167), LDR (-0.2105) as expected. This means for NPL which exhibits a strong negative relationship, the more assets are deteriorated the less profitable the bank is. They move in opposite directions. The same applies to the OER, the more management spends the less the commercial bank is profitable. LDR represents the liquidity condition of the commercial banks, the higher the ratio the less profitable the bank, but the correlation is not strong which means a weak linear relationship.

4.11 Regression Analysis

The regression findings of the commercial banks are presented in table 4.10.

The coefficient of determination, R-squared was 0.6380 and the adjusted R-squared was 0.5174. This shows the reliability of the model, that the independent variables were collectively 51.74% related to the dependent variable ROA. The remaining 48.3% of changes will be identified by other factors not captured in the model.

Table 4.10: Regression analysis for the dependent variable

Roa	Coef.	Std. Err.	T	P>t	[95% Conf. Interval]	
Car	.015727	.0295875	0.53	0.603	-.0473373	.0787913
Npl	-.1572128	.0533003	-2.95	0.010	-.2708198	-.0436058
Oer	-.049285	.0254751	-1.93	0.072	-.1035839	.0050139
Nim	.0929337	.1027819	0.90	0.380	-.1261407	.3120082
Ldr	-.014243	.0193008	-0.74	0.472	-.0553818	.0268957
_cons	6.147186	2.374445	2.59	0.021	1.086177	11.20819

Source: Worked out from STATA software, 2013

The Durbin-Watson statistic is 2.2248 which is greater than 2; it means that there is no serial correlation between independent variables and ROA. Therefore, this meets one of the regression assumptions. The mean VIF is 1.31 and the VIF of all independent variables is below 5, which means that co-linearity does not exist between the independent variables present in the model.

The breusch-pagan test for heteroscedasticity gave a probability of 0.9206, making it significant hence accepting the null hypothesis that variables have constant variances.

The analysis in Table 4.10 exhibits some interesting results. Four variables namely CAR, OER, NIM and LDR are insignificant at the 95% confidence level. The only variable namely NPL is not only significant at 95% confidence level as well negatively significant. This means increase an in NPL will lead to a decrease in ROA.

Based on the regression results in Table 4.10 the model of this study can be written as follows:

Empirical Model:

ROA= 6.147 + 0.0157CAR – 0.1572NPL – 0.0493OER + 0.0929NIM – 0.0142LDR

Significant model:

ROA= β_0 – 0.1572NPL

Model shows that a 0.0157 point increase in CAR will lead to a 1 point increase in ROA, which means CAR is positively correlated to ROA. Along with CAR, NIM also has a positive relation with the ROA. As model shows 0.0929 point increase in NIM will lead to a 1 point increase in ROA. But a 0.1572 point increase in NPL will result in a decrease of 1 point in ROA, a 0.0493 point increase in OER will result in a decrease of 1 point of ROA and a 0.0142 increase in LDR will result in a decrease of 1 point of ROA. This shows a negative relation between these three variables namely NPL, OER and LDR with ROA. The significance of the model is with 1 independent variable, NPL.

In the econometric model, NPL is significant while CAR, OER, NIM and LDR are not significant. Therefore, we reject hypothesis 2. We do not reject hypothesis 1, hypothesis 3, hypothesis 4 and hypothesis 5.

The relationship between CAMEL components and profitability of commercial banks using ROA can be summarized by Table 4.11 which presents the findings based on the hypotheses and specific objective of the study of finding out the determinants of profitability.

Table 4.11: Summary of findings

s/n	Hypothesis	p-value	Empirical conclusion
1	H_1: There is no significant relationship between capital adequacy ratios and profitability of the banks	0.603	Do not reject null
2	H_2: There is no significant relationship between asset quality ratios and profitability of the banks	0.010	Rejected
3	H_3: There is no significant relationship between management quality ratios and profitability of the banks	0.072	Do not reject null
4	H_4: There is no significant relationship between earnings ratios and profitability of the banks	0.380	Do not reject null
5	H_5: There is no significant relationship between liquidity ratios and profitability of the banks	0.472	Do not reject null

Based on the findings, the NPL which reflects that loans are in default or close to being in default, and the odds that the loan will be repaid is significantly low represents asset quality and measures amount of default in portfolio. Since this is what affects the profitability in Tanzania it means our banks will suffer significantly in terms of generating profits in a sustained manner if they do not recover the loans, both principal and interest; that they give to customers. The NPL of the sample banks have an average low rating of 4.67, which means that the assets are managed poorly but they still are profitable with an average ROA and NIM rating of 1. This means that the banks charge too high interest rates to compensate on the poor asset quality that is maintained. As a result the customers have a heavy burden of paying back high interest on loans. The Tanzanian banking sector therefore has a potential to maximize profits by properly managing loans and as a result reduce interest rates, this way the loans become more affordable to the customers and at the same time the bank makes significant profits.

CHAPTER FIVE
CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this section of this study, conclusions are given and suggestions on improvement of commercial banks profitability. The limitations of using CAMEL framework are also stated and scope for further studies is presented.

5.2 Summary

The study analyzed determinants of profitability of commercial banks in Tanzania taking into account three sampled major banks, CRDB, NBC and NMB; for the period of seven (7) years starting from 2006 to 2012. Financial performance of the sample banks was determined and compared based on their CAMEL ratios and the banks appear to have sound profitability, capital adequacy, earnings and liquidity. On the other hand they appear to have poor asset quality and high operating expenses.

NMB out-ranked CRDB and NBC on the basis of the internal factors used to rank them. In determining profitability, the most important variable was found to be non-performing loans ratio which represents the internal factor of the quality of assets which proved to be a significant factor.

5.3 Financial performance of major banks

Based on objective one of this study, the financial performance of the three major sample banks was derived and compared. The following are conclusions made and recommendations on improvement of performance.

Profitability

The commercial banks generally displayed a satisfactory profitability trend measured by ROA. Overall the performance of commercial institutions was sound. Generally the profitability of commercial banks remains to be sound in all three commercial banks and this has been due to the dominance of market share in the industry. NMB showed the strongest ROA among the three banks.

Capital Adequacy

The commercial banks are well capitalized and have a firm capital base relative to risk-weighted assets. According to international convention of rating, their capital base is adequate. The banks should maintain their CAR or improve it so they can better manage any potential shocks to their balance sheets. The CAR was strong enough over the period and managed possible shocks to their balance sheets that may have been an outcome of the GFC. NMB displayed the strongest capital base among all three commercial banks.

According to Basel II, it is important that financial institutions have an Internal Capital Adequacy Assessment Process (ICAAP) in place for assessing its overall capital adequacy in relation to its risk profile and a strategy for maintaining appropriate capital levels. The Basel III, on the other hand aims to strengthen the risk coverage of the capital framework by promoting more integrated management of market and counterparty credit risk, provide incentives to strengthen the risk management of counterparty credit exposures, raise counterparty credit risk management standards by including wrong-way risk, reduce procyclicality etc.

Asset Quality

The NPL of the commercial banks generally exhibited poor ratings. Financial institutions generally fail due to a large percentage of non-performing loans in comparison with their total capital and loan reserves. Asset quality affects earnings through provisions to the loan reserve. An inadequate reserve will require additional provisions, which reduces earnings through reduced interest income. Loans past due are not paying interest as scheduled, have a negative impact on the interest income. Of all three banks, NMB showed better quality of assets.

Therefore commercial banks should work on reducing their non-performing loans and their provision to the loan reserve. This can be done by improving the loan recovery system, setting limits to credit officers in terms of portfolio at risk (PAR), retrieve authority to disburse loans from those loan officers who seem to be incompetent in loan authorization.

The banks should generally make sure they adopt effective policies before loans are made, enforce these policies, monitor the portfolios before loans are made and maintain an adequate allowance for loan losses.

Management Quality

Management as measured by OER has displayed worst ratings. CRDB had a better spending pattern than the other two major commercial banks. Measuring management quality can be tricky but generally a good management takes into account the value of money by concentrating on the three E's; economy, efficiency and effectiveness. Therefore the commercial banks are expected to reduce their OER, which may in turn improve profitability. Other ways of measuring management include; satisfaction of employees and customers, job turnover, number of people applying for a job, number of customers joining the bank, number of customers closing their accounts etc. The answers to this question may be used to judge the management of a bank.

Earnings

The earnings performance of the commercial banks based on NIM depict best ratings with NMB being at the top. The commercial banks have the worst spending ratings but yet have the best earning performance.

Earnings are the primary means for a bank to increase capital internally, specifically through retained earnings.

Liquidity

Liquidity of commercial banks displays a fair rating, NMB being comparably better in its liquidity management.

Information should be readily available for day-to-day liquidity management and risk control as well as during times of stress. Data should be appropriately consolidated, comprehensive yet succinct, focused and available in a timely manner. Ideally, the regular reports a bank generates will enable it to monitor liquidity during a crisis. Management should keep crisis monitoring in mind with effective management information systems.

5.4 Ranking of banks based on CAMEL ratings

NMB which is a joint venture commercial bank partly owned by the government, partly by foreigners and partly by individual investors; has out-ranked the other two banks CRDB and NBC based on the ratios which represent internal factors based on CAMEL using a CAMEL rating system.

5.5 Determinants of profitability of commercial banks

It can be concluded from the multiple regressions analysis that the NPL was significant but had a negative effect on ROA, while CAR, OER, NIM, and LDR had an insignificant effect on ROA. So instead of shooting interest rates above other countries around the world; Tanzanian banks should focus on improving the quality of their assets since the quality of assets is what determines profitability. So instead of having a large loan size or large spread it is the quality of the loan that matters. The government also has a role to play in improving the legal, judicial and information infrastructure to smoothen the loan recovery process hence reduced risks which will lead to reduced interest rates. Another way forward could be for banks to diversify their products and not heavily rely on loans whose potential income is uncertain as compared to other services which require fees and commissions like advising on mergers and acquisitions, structured finance and syndicated loans, cash management services etc.

5.6 Scope for further studies

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.

Based on this research it is now clear that quality of assets which is an internal factor determines profitability but the model has a reliability percentage of 51.4% only meaning there could be external factors which are not introduced in the model which could explain the profitability of commercial banks. 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.

Another area being recommended for further study is the use of the comprehensive CAMEL rating system to include both qualitative and quantitative factors. The quality of assets has proven to be a significant determinant of commercial bank profitability, commercial banks may also opt to diversify their products so that they do not rely heavily on loans this way they may become more profitable from the fees and commission generated from offering diversified products. Further studies may be carried out to compare profitability of banks that offer diversified products and those that rely heavily on loans, to determine which banks are more profitable OR studies on whether diversification improve banks profitability and efficiency. The findings of this study will guide managers in making a decision on whether to diversify their products or not.

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REFERENCES

Alam HM, Raza A, Akram M (2011). A financial performance comparison of public vs private banks: The case of commercial banking sector of Pakistan. Int. J. Bus. Soc. Sci., 2(11): 56-64.

Avkiran NK (1995). Developing an instrument to measure customer service quality in branch banking. Int. J. Banks Mark., 12(6): 10-18.

Bakar N, Tahir IM (2009). Applying multiple linear regression and neural network to predict bank performance. Int. Bus. Res., 2 (4):176-183.

Baral JK (2005). Health check-up of commercial banks in the framework of CAMEL: A case study of joint venture banks in Nepal, J. Nepalese Bus. Stud., 2(1): 41-55

Baral, K.J. (2005). Health Check-up of Commercial Banks in the Framework of CAMEL: A Case Study of Joint Venture Banks in Nepal. *Journal of Nepalese Business Studies*, II (1), 41-55.

Bernstein, D. (1996). Asset Quality and Scale Economies in Banking. *Journal of Economics and Business,* 48, (2) 157-166. ISSN 01486195.

BOT, (2012) Banking Supervision, supervisory methodologies http://www.bot-tz.org/BankingSupervision/SupervisoryMethodololgies.asp

Business dictionary (2013), What is profit. Retrieved from the World Wide Web on 30th January 2013, http://www.businessdictionary.com/definition/profit.html.

Büyüksalvarcı A, Hasan A (2011). Determinants of capital dequacyratioin Turkish Banks: A panel data analysis. Afr. J. Bus. Manag. 5(27):11199-11209.

Chang, Y.T. (2006). Role of Non-performing Loans (NPLs) and Capital Adequacy in Banking Structure and Competition. University of Bath, School of Management. Bath, United Kingdom.

Retrieved from: <http://www.bath.ac.uk/management/research/papers.html> Date 05-15-2011.

Christopoulos, A.G., Mylonakis, J., &Diktapanidis, P. (2011). Could Lehman Brothers‟ Collapse Be Anticipated? An Examination Using CAMELS Rating System. *International Business Research*, 4 (2), 11-19 doi:10.5539/ibr.v4n2p11, Canadian Center of Science & Education.

Couto, R.L.R., &Brasil, B.C. (2002).Framework for the Assessment of Bank Earnings. Bank for international settlement, FSI award 2002 winning paper, ISSN 1684-7180, 1-38.

Demirgüç-Kunt, A., & Detragiache, E. (1999).*Monitoring banking sector fragility: a multivariate logit approach*. IMF Working Paper, No. 106.

Directorate of Banking Supervision (2010).Banking Sector Performance.

Elyor S (2009). Factors affecting the performance of foreign banks in Malaysia. Master's degree Thesis, Univ. Utara Malaysia.

Esther L. A., Matthew G. (2012). A Financial Performance Comparison of Foreign Vs Local Banks in Ghana. International Journal of Business and Social Science.

Financial Stability Report (2010). Tanzania Response to Global Financial Crisis.

Gilbert, R. Alton, Andrew P. Meyer and Mark D. Vaughan.(2000). "The Role of a CAMEL Downgrade Model in Bank Surveillance. "Working Paper 2000-021A, The Federal Reserve Bank of St. Louis. Nov. 1, 2005 (http://research.stlouisfed.org/wp/2000/2000-021.pdf).

Gopinathan T (2009). Financial ratio analysis for performance check.http://suite101.com/article/financial-ratio-analysis-for-performancecheck.

Hempell H. S (2002), Testing for Competition Among German Banks, Discussion Paper Series 1: Economic Studies 2002, 04, Deutsche Bundesbank, Research Centre.

Herring, R., Santomero, A. (1991).The Role of the Financial Sector in Economic Performance. Research Center: Financial Institutions Center. Retrieved January 23rd from the World Wide Web: http://knowledge.wharton.upenn.edu/paper.cfm?paperID=368

Hilbers, Paul, Russell Krueger, and Marina Moretti. 2000. New Tools for Assessing Financial System Soundness. *Finance and Development* 37 :8-12

Ho C, Zhu D (2004). Performance measurement of Taiwan commercial banks. Int. J. Product. Perform. Manag., 53(5): 425-434.

Hui, X, and Jha, S, (2012). A comparison of financial performance of commercial banks: A case study of Nepal, Harbin Institute of Technology, China.

Heffernan S. (2005), Modern Banking in Theory and Practice. John Wiley & Sons.

Khrawish H. (2011). Determinant of commercial banks performance in Jordan. *International journal of finance and economics, 81*.

Lal, D. (2010). The great crash of 2008: Causes and consequences. *Cato Journal*, 30 (2), 265-277.

McNally, Edward A. 1996. "Basic Topics in Sound Bank Management." EDI Working Paper, Washington DC: The World Bank.

Molyneaux P., & Thornton J. (1992). The determinants of European bank profitability. *Journal of Bankingand Finance, 16,* 1173-1178. http://dx.doi.org/10.1016/0378-4266(92)90065-8

Naceur S (2003). The determinants of the Tunisian banking industry profitability: Panel evidence. <www.mafhoum.com/press6/ 174E11>.

Noulas, A. (1999). Profitability and Efficiency of the Greek Banks (1993-1998). *Journal of the Banking Association of Greece*, *19*(20), 53-60.

Parveenbari (2010) Camels Rating, Retrieved on 7th February from the World Wide Web. http://www.slideshare.net/parveenbari/camels-rating.

Pastory, D. and Qin, X. (2012). Commercial Banks Profitability Position: The Case of Tanzania International Journal of Business and Management; Vol. 7, No. 13; 2012. Canadian Center of Science and Education

Perdue M. (2013). How to Use the Pearson Correlation Coefficient. Demand Media. Retrieved from the World Wide Web on May 23rd 2013, http://classroom.synonym.com/use-pearson-correlation-coefficient-2599.html

Rose, P. S., and Hudgins, S. C. (2005). Bank Management & Financial Service. New York: McGraw Hill.

Shekhar A. (2012). From Financial Crisis to Great Recession: The Role of Globalized Banks, American Economic Review, American Economic Association, vol. 102(3), pages 225-30, May.

Sinkey Jr, Joseph F (1992). Commercial bank financial management. In: Financial-Service Industry, 4th Ed, Macmillan Publishing Company, Ontario.

Staikouras C.,& Steliaros M. (1999). Determinants Factors of Profitability of the Greek Banking System. *Journal of the Banking Association of Greece, 19*(20), 61-66.

Sufian, F., & Chong, R. R. (2009). Determinants of Bank Profitability in a Developing Economy: Empirical Evidence from Philippines. *Asian Academy of Management*

Journal of Accounting and Finance, 4(2) 91-112. Retrieved from http://www.usm.my/journal/aamjaf/vol%204-2-2008/4-2-5.

The World Bank, (2012). The Financial Sector Retrieved January 23rd from World Wide Webhttp://data.worldbank.org/topic/financial-sector.

Uzhegova 0. (2010). The Relative Importance of Bank-Specific Factors for Bank Profitability in Developed and Emerging Economies. The Kazakhstan Institute of Management, Economics and Strategic Research (KIMEP).

UCLA: Statistical Consulting Group, Regression with stata. Retrieved from the World Wide Web on May 23, 2013http://www.ats.ucla.edu/stat/stata/webbooks/reg/chapter2/statareg2.htm (accessed).

Wooldridge, J (2013). Introductory Econometrics: A Modern Approach, 5th Ed, Cenage learning.

http://www.crdbbank.com/

http://www.nbctz.com/

http://www.nmbtz.com/

APPENDICES

Appendix 1

List of commercial banks operating in Tanzania.

S/N	Name of Bank	Chief Executive Officer	Contacts	Head Office Location
1	AccessBank (T) Ltd	Managing Director **Mr. Roland Coulon**	P. O. Box 95608, **Dar es Salaam**, TEL: +255 22 2774355 FAX: +255 22 2774340 www.accessbank.co.tz	Kijitonyama / Opst. Kijiji cha Makumbusho, **Dar es Salaam**
2	Advans Bank (T) Ltd	Ag. Chief Executive Officer **Mr. Peter Moulders**	P. O. Box 34459, **Dar es Salaam**, Tel: +255 22 2401174/6 Fax: +255 2401175 www.advansbanktanzania.com	ManzeseDarajani. **Dar es Salaam**
3	African Banking Corporation (T) Ltd	Managing Director **Mr. Boniface Nyoni**	P. O. Box 31, **Dar es Salaam**, Tel: +255 22 2137089 Fax: +255 22 2119301 www.africanbankingcorp.com	Barclays House, Ohio Street, **Dar es Salaam**
4	Akiba Commercial Bank Ltd	Managing Director **Mr. John Lwande**	P. O. Box 669, **Dar es Salaam**, Tel: +255 22 2118344 Fax: +255 22 2114173 www.acbtz.com	Amani Place, Ohio Street **Dar es Salaam**
5	Amana Bank Ltd	Managing Director **Dr. Idris Rashid**	P. o. Box. 9771, **Dar es Salaam** Tel: +255 22 2129007/8 Fax: +255 22 2129013 www.amanabank.co.tz	Golden Jubillee building , Garden/Ohio Street **Dar es Salaam**
6	Azania Bank Ltd	Chief Executive Officer **Mr. Charles Singili**	P. O. Box 9271, **Dar es Salaam**, Tel: +255 22 2412025-7 Fax: +255 22 2412028 www.azaniabank.co.tz	Mawasiliano Towers, Sam Nujoma Road **Dar es Salaam**
7	Bank M (T) Ltd	Chief Executive Officer **Mr. Sanjeev Kumar**	P. o. Box 96, **Dar es Salaam**, Tel: +255 22 2127825 Fax: +255 22 2127824 www.bankm.co.tz	Ocean Road **Dar es Salaam**
8	Bank of Baroda (T) Ltd	Managing Director **Mr. Deba P. Gayen**	P. O. Box 5356, **Dar es Salaam**, Tel: +255 22 2124472 Fax:+255 22 2124457 www.bankofbaroda.com	Sokoine Drive/Ohio Street **Dar es Salaam**
9	Bank of India (T) Ltd	Managing Director **Mr. Ramesh Kadam**	P. O. Box 7581, **Dar es Salaam**,	Maktaba Street

			Tel: +255 22 213 5358 Fax: +255 22 2135363 www.boitanzania.co.tz	**Dar es Salaam**
10	Barclays Bank (T) Ltd	Managing Director **Mr. KiharaMaina**	P. O. Box 5137, **Dar es Salaam**, Tel: +255 22 2129381 Fax :+255 22 2129757 www.africa.barclays.com	Barclays House, Ohio Street, **Dar es Salaam**
11	BOA Bank (T) Ltd	Managing Director **Mr. AmmishaddaiOwusu-Amoah**	P. O. Box 3054, **Dar es Salaam**, Tel: +255 22 2113593 Fax: +255 22 2116422 www.boatanzania.com	Kivukoni/Ohio Street **Dar es Salaam**
12	Citibank (T) Ltd	Ag. Managing Director **Mr. Gasper Njuu**	P. O. Box 71625, **Dar es Salaam**, Tel: +255 22 2117575, Fax: +255 22 2113910 www.citibank.co.tz	Peugeot House, 36 upanga Road. **Dar es Salaam**
13	Commercial Bank of Africa Ltd	Managing Director **Mr. YohaneKaduma**	P. O. Box 9640, **Dar es Salaam**, Tel: +255 22 2130113 Fax :+255 22 2130116 www.cba.co.tz	Amani Place, Ohio Street, **Dar es Salaam**
14	CRDB Bank Plc	Managing Director **Dr. Charles Kimei**	P. O. Box 268, **Dar es Salaam** Tel: +255 22 2117441-7 Fax: +255 22 2116714 www.crdb.com	Azikiwe Street **Dar es Salaam**
15	Diamond Trust Bank (T) Ltd	Chief Executive Officer **Mr. VijuCherian**	P. O. Box 115, **Dar es Salaam**, Tel: +255 22 2114888 Fax: +255 22 2114210 www.dtbafrica.com	Harbor View Towers Samora Avenue **Dar es Salaam**
16	Ecobank (T) Ltd	Managing Director **Mr. Enoch Osei-Safo**	P. O. Box 20500, **Dar es Salaam**, Tel: +255 22 2137447 Fax: +255 22 2137446 www.ecobank.com	Sokoine Drive **Dar es Salaam**
17	Exim Bank (T) Ltd	Managing Director **Mr. Anthony Grant**	P. O. Box 1431, Dar**es Salaam**, Tel: +255 22 2293400 Fax: +255 22 2119737 www.eximbank-tz.org	Exim Tower, Ghana Avenue **Dar es Salaam**
18	Equity bank Tanzania limited	Managing Director **Mr. Samuel Makome**	P. O. Box 110183, **Dar es Salaam**, Tel: 2865188 www.equitybank.co.tz	Quality Centre Mall, Nyerere road **Dar es Salaam**

19	FBME Bank Ltd	General Manager **Mr. John Lister**	P. O. Box 8298, **Dar es Salaam**, Tel: +255 22 2126000 Fax +255 22 2126006 www.fbme.com	**Samora Avenue** **Dar Es Salaam**
20	First National Bank (T) Ltd	Chief Executive Officer: **Mr. Richard Hudson**	P. O. Box 72290, **Dar es Salaam**, Tel +255 768 989000/41 Fax +255 768 989010/44 www.fnbtanzania.co.tz	2nd Floor – FNB House, Ohio Street **Dar es Salaam**
21	Habib African Bank Ltd	Managing Director **Dr. Hassan S. Rizvi**	P. O. Box 70086, **Dar es Salaam**, Tel: +255 22 211109 Fax: +255 22 2111014 www.habib.com	Zanaki/Indira Gandhi Street **Dar es Salaam**
22	I & M Bank (T) Ltd	Chief Executive Officer **Mr. AnuragiDureha**	P. O. Box 1509, **Dar es Salaam**, Tel: +255 22 2110212 Fax:+255 222118750 www.imbank.com	Maktaba Street **Dar es Salaam**
23	International Commercial Bank (T) Ltd	Chief Executive Officer **Mr. Baseer Mohammed**	P. O. Box 9363, **Dar es Salaam**, Tel:+255 22 2110518 Fax: +255 22 2110196 www.icbank.com	Morogoro Road/Jamhuri Street; **Dar es Salaam**
24	KCB Bank (T) Ltd	Managing Director **Mr. Moez Mir**	P. O. Box 804, **Dar es Salaam**, Tel: +255 22 2664388 Fax: +255 22 2115391 www.kcb.co.ke	Harambee Plaza, Ali Hassan Mwinyi/Kaunda Drive **Dar es Salaam**
25	Mkombozi Commercial Bank Plc	Managing Director **Mrs. Edwina Lupembe**	P. O. Box 38448, **Dar es Salaam**, Tel: 2137806/7 Fax: +255 22 2137802 www.mkombozibank.com	St. Joseph Cathedral, Mansfield Street; **Dar es Salaam**,
26	National Microfinance Bank Plc	Managing Director **Mr. Mark Wiessing**	P. O. Box 9213, **Dar es Salaam**, Tel: +255 22 2161351, Fax: +255 22 2161352 www.nmbtz.com	NMB House, Jamhuri/Azikiwe Street **Dar es Salaam**
27	NBC Bank Ltd	Managing Director **Mr. Lawrence Mafuru**	P. O. Box 1863, **Dar es Salaam**, Tel: +255 22 2113914 Fax: +255 22 2112887 www.nbcltd@nbctz.com	Sokoine Drive **Dar es Salaam**
28	NIC Bank (T) Ltd	Managing Director **Mr. James Muchiri**	P. O. Box 20268, **Dar es Salaam**, Tel: +255 22 2118625	Harbor View Towers, Samora Avenue

			Fax:+25522 2116733 www.sfltz.com	**Dar es Salaam**
29	Peoples' Bank of Zanzibar Ltd	Managing Director **Mr. Juma Mohamed**	P. O. Box 1173, **Zanzibar,** Tel: +255 24 2238481 Fax: +255 22 2231121 www.pbzltd.com	Darani, **Zanzibar**
30	Stanbic Bank (T) Ltd	Managing Director **Mr. Bashir Awale**	P. O. Box 72647, **Dar es Salaam**, Tel: +255 22 2666430 Fax: +255 22 2666301 www.stanbicbank.co.tz	Ali Hassan Mwinyi/Kinondoni Road **Dar es Salaam**
31	Standard Chartered Bank (T) Ltd	Managing Director **Mr. Jeremy Awori**	P. O. Box 9011, **Dar es Salaam**, Tel: +255 222113785 Fax: +255 22 2113770 www.standardchartered.com	Garden Avenue/Shaaban Robert Street **Dar es Salaam**
32	United Bank for Africa(T) Ltd	Managing Director **Mr. Daniel W. K. Addo**	P. O. Box 80514, **Dar es Salaam**; Tel: +255 22 2763452/3 Fax:+255 22 2863454 www.ubagroup.com	Nyerere Road **Dar es Salaam**

Source: Published in http://www.bot-tz.org/BankingSupervision/RegisteredBanks.asp, BOT, 2013

Appendix 2

Regression table

```
. reg roa car npl oer nim ldr

      Source |       SS       df       MS              Number of obs =      2
> 1
-------------+------------------------------           F(  5,    15) =    5.2
> 9
       Model |  19.5344545     5  3.90689089           Prob > F      =  0.005
> 4
    Residual |  11.0816604    15  .738777359           R-squared     =  0.638
> 0
-------------+------------------------------           Adj R-squared =  0.517
> 4
       Total |  30.6161149    20  1.53080574           Root MSE      =  .8595
> 2

-------------+----------------------------------------------------------------
> -
         roa |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval
> ]
-------------+----------------------------------------------------------------
> -
         car |    .015727   .0295875     0.53   0.603    -.0473373    .078791
> 3
         npl |  -.1572128   .0533003    -2.95   0.010    -.2708198   -.043605
> 8
         oer |   -.049285   .0254751    -1.93   0.072    -.1035839    .005013
> 9
         nim |   .0929337   .1027819     0.90   0.380    -.1261407    .312008
> 2
         ldr |   -.014243   .0193008    -0.74   0.472    -.0553818    .026895
> 7
       _cons |   6.147186   2.374445     2.59   0.021     1.086177    11.2081
> 9
-------------+----------------------------------------------------------------
```

Appendix 3

Durbin-watson test for autocorrelation

```
. tsset index
        time variable:  index, 1 to 21
                delta:  1 unit

. dwstat

Durbin-Watson d-statistic(  6,    21) =  2.224834
```

Appendix 4

Hettest for heteroskedasticity

```
. hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of roa

         chi2(1)      =     0.01
         Prob > chi2  =   0.9206
```

Appendix 5

Multicollinearity test

```
. vif
```

Variable	VIF	1/VIF
ldr	1.39	0.717837
car	1.38	0.723199
oer	1.32	0.759256
npl	1.29	0.773834
nim	1.17	0.855331
Mean VIF	1.31	